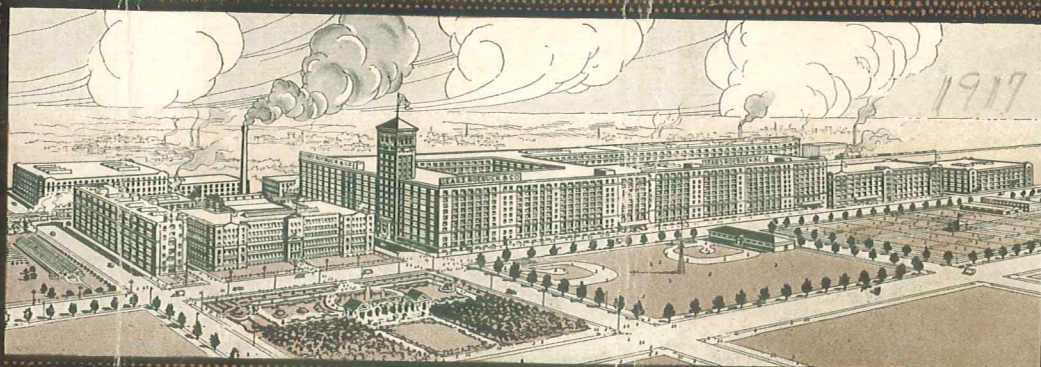


SEARS, ROEBUCK AND CO., CHICAGO



Electrical Goods

Kitchen Power Units
Electric Sadrions
Electric Washing Machines
Telephones and Telephone Supplies
Electric Fans, Trains
Batteries and Transformers
Electric Motors and Domestic Heating
Appliances
Electric Fireless Cookers
Flash Lights and Batteries
Medical Batteries and Vibrators
Telegraph Outfits
Electric Light Fixtures and Supplies
Electric Lighting Plants
Auto Lamps and Lamp Sundries
Ignition Accessories

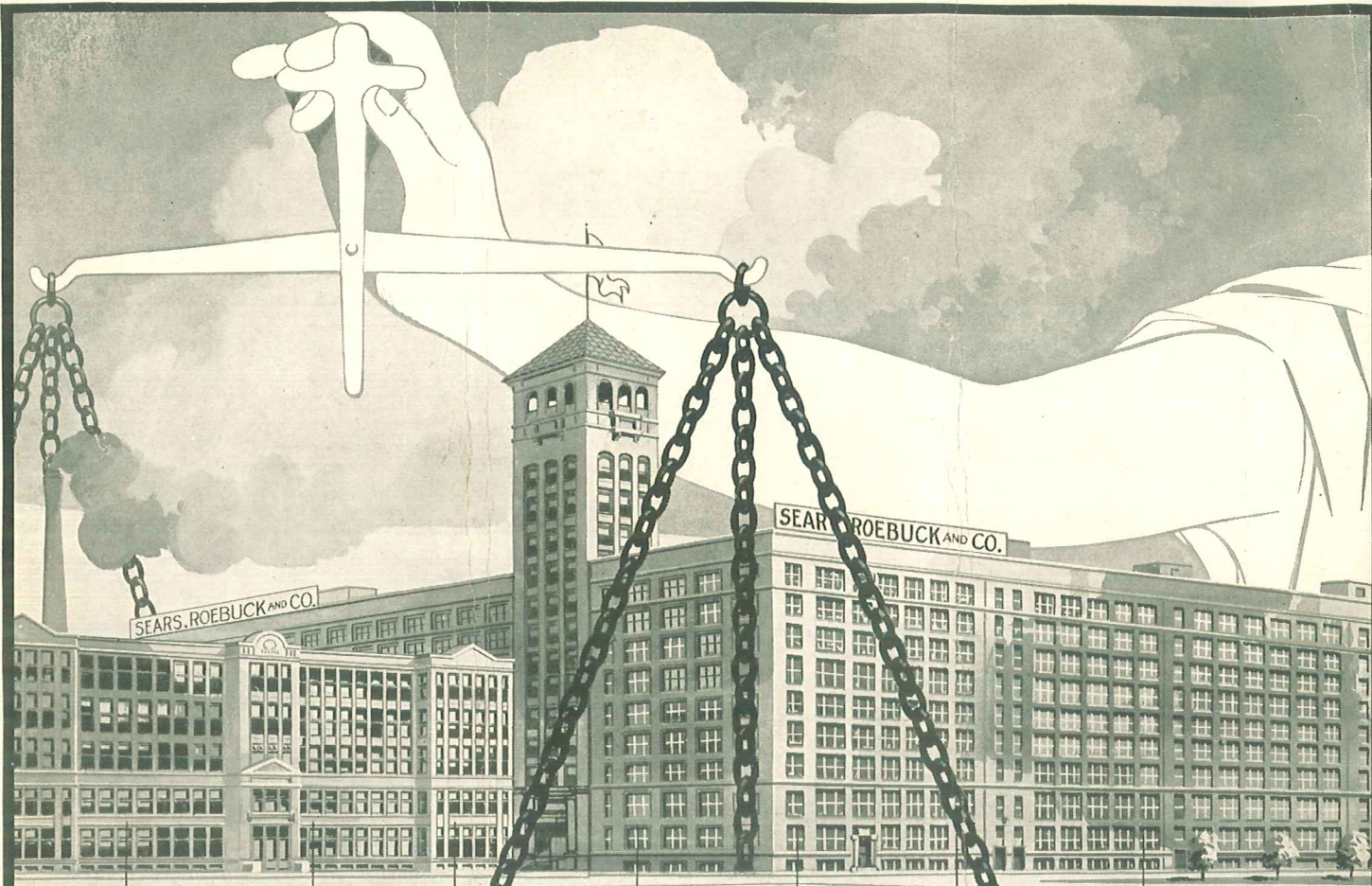
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To Find
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Have You
Our
Big
Catalog?
Read Page 1

ORIGINATORS OF THE GUARANTEE THAT
STANDS THE TEST IN THE SCALES OF JUSTICE



We Guarantee

That each and every article
in this catalog is exactly as
described and illustrated.

We guarantee that any article purchased from us will satisfy you perfectly; that it will give the service you have a right to expect; that it represents full value for the price you pay.

If for any reason whatever you are dissatisfied with any article purchased from us, we expect you to return it to us at our expense.

We will then exchange it for exactly what you want, or will return your money, including any transportation charges you have paid. ■ ■ ■ ■ ■

SEARS, ROEBUCK AND CO., Chicago

YOUR
MONEY
WILL BE
PROMPTLY
RETURNED
IF YOU
ARE NOT
PERFECTLY
SATISFIED

SEARS, ROEBUCK AND CO., CHICAGO

THE Following Pages of This Special Catalog of Electrical Goods Are a Part of Our Big 1490-Page General Catalog Here Illustrated.

¶ For your convenience we have printed and bound the electrical goods section of our big General Catalog separate from the other pages of the Big Book. This explains why certain lines at the bottom of some of the pages or elsewhere in the catalog refer to pages not found in this special catalog. In addition to these General Catalog pages we have included a few special pages of kindred merchandise.

¶ The pages which precede and the pages which follow the electrical goods section in our big General Catalog comprise a great many other lines of merchandise—dry goods, wearing apparel, home furnishings, jewelry, musical instruments, toys, household supplies, hardware and farm supplies. If you have not a copy of our big General Catalog be sure to write for one and make it a rule to consult its pages whenever you need supplies of any kind.

¶ We offer you vastly greater buying opportunities than you can have through any other method of merchandising. From our big General Catalog you can build a home and furnish it; clothe every member of your family and supply them with reading, music and physical recreation; equip and maintain a farm, an office, a factory, an automobile or a motor boat; in fact, supply almost every daily need of whatsoever kind—all at bedrock prices based on the most economical selling methods.

¶ But just as the farm yields most bountifully by intensive cultivation, so this catalog offers its greatest benefits when constantly referred to as each need arises. This is YOUR OPPORTUNITY TO SAVE MONEY.

Our Terms We require cash with order. The best ways to send money are in the form of an express money order, postoffice money order, a bank draft, your personal check, or currency in a registered letter. Parcel post, express and freight rates are shown on pages 765A, 766 and 767 of this book. See index on page 768A.



ORS OF THE GUARANTEE THAT
HE TEST IN THE SCALES OF JUSTICE

CATALOG 134

INDEX
O 765

FOR ORDER BLANKS
SEE BACK OF CATALOG

Electric Motors for Power Machinery

Use Electricity to Run Your Machinery.

If you have electricity on your place, or can easily obtain it, you will find electric motors a most useful, economical and convenient type of engine. These little electrical engines start or stop at the turn of a switch. The pulley gives a steady pull at a practically constant speed. They have practically nothing to get out of order and are little or no trouble to handle. And they give the best of service at surprisingly low cost.

For Every Kind of Work.

The farm, the small shop and the home are now following the example of progressive business houses in using motors for practically every kind of work. The table below will give some idea of their many uses. Think of the machines you can run with a belt. We have efficient, powerful little motors that will operate them easily and at a low cost.

Easy to Operate and Control.

Motors start or stop at the turn of a small switch. With some kinds the speed can be regulated all the way from one-quarter to full speed. We send full directions with each motor. No need to be an electrician to install it. About all the attention the motors require is a little oiling. And they last many years, even though worked very hard.

Economical—Convenient.

A motor uses only enough power to do the work in hand. And as it is easily stopped and started, you run it only while it is needed—not one second more. Think of the saving over an ordinary engine, which you dislike to stop because it is some trouble to start it again, and which eats up nearly as much fuel running light as when loaded heavy.

And motors are so convenient. They take up very little space (notice the small dimensions), and with their light weight are easily moved about. They are practically free from vibration, so can be mounted on floors, walls, ceilings or frames of machines. They are quiet and they give off no smoke, moisture or soot; splash no oil.

We Guarantee Satisfaction.

Every one of our motors is sold with the understanding that it MUST give satisfactory service. It may be returned to us at our expense if you are dissatisfied for any reason whatever. We can afford to make this offer because the materials used in our motors are of high quality, the workmanship is high grade, and each motor is thoroughly tested before being shipped.

Free Advice.

If you have any sort of power driven machines, it will pay you to investigate electric motors. It will cost you nothing to let us figure for you. Find out from the company supplying electricity in your neighborhood what kind of current they furnish (direct or alternating); if alternating, how many cycles and whether single, two or three-phase; and finally, the voltage. Let us know, too, the machines you wish to run, their speeds and, if you can, the horse-power required. We will then gladly recommend the best motor for your needs and give you any further information you wish, without obligation to you.

Table of Usual Motor Requirements

Also See Special Motors in General Catalog.

For the Home.

Machine to Be Driven	Horse-Power
Washing Machine.....	$\frac{1}{8}$ - $\frac{1}{4}$
Vacuum Cleaner.....	$\frac{1}{8}$
Sewing Machine.....	$\frac{1}{10}$
Buffer and Grinder.....	$\frac{1}{20}$ - $\frac{1}{10}$
Coffee Mill.....	$\frac{1}{8}$ - $\frac{1}{4}$
Meat Chopper.....	$\frac{1}{4}$
Bread Mixer.....	$\frac{1}{4}$
Vegetable Peeler.....	$\frac{1}{4}$
Cream Separator (300 qts. hour)	$\frac{1}{4}$
Churn.....	$\frac{1}{4}$ - 1
Ice Cream Freezer.....	$\frac{1}{8}$ - $\frac{1}{4}$
Cider Mill.....	$\frac{1}{2}$ - 3
Pump Jack.....	$\frac{1}{2}$

For the Dairy.

Machine to Be Driven	Horse-Power
Milker (2 cows).....	$\frac{1}{10}$

Machine to Be Driven	Horse-Power
Cream Separator (300 qt. hour)....	$\frac{1}{4}$
Churn.....	$\frac{1}{4}$ - 1
Ice Cream Freezer.....	$\frac{1}{8}$ - $\frac{1}{4}$

For the Workshop.

Machine to Be Driven	Horse-Power
Grindstone.....	$\frac{1}{4}$ - $\frac{1}{2}$
Power Drill.....	$\frac{1}{4}$ - $\frac{1}{2}$
Lathe and Countershaft.....	$\frac{1}{4}$ - 2
Cord Wood Saw.....	5
Wood Splitter.....	2
Concrete Mixer.....	2-10

For the Farm.

See Also "For the Home."

Machine to Be Driven	Horse-Power
Cane Mill.....	$\frac{3}{4}$ - 5
Pump Jack.....	$\frac{1}{2}$

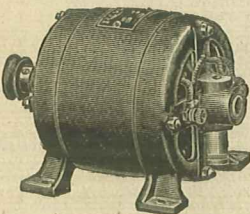
Machine to Be Driven	Horse-Power
Grindstone.....	$\frac{1}{4}$ - $\frac{1}{2}$
Cord Wood Saw.....	5
Wood Splitter.....	2
Corn Sheller.....	$\frac{1}{2}$ - 2
Poultry Vegetable Cutter.....	$\frac{1}{4}$ - $\frac{1}{2}$
Bone Cutter.....	$\frac{1}{4}$ - 1
Grist Mill (Small).....	$\frac{1}{4}$ - 3
Grist Mill (Large).....	15-30
Grain Grader and Separator.....	$\frac{1}{4}$ - $\frac{1}{2}$
Fanning Mill.....	$\frac{1}{4}$
Ensilage Cutter.....	2-20
Husker and Shredder.....	4-15
Grain Elevator.....	1-3
Hay Press.....	2-7 $\frac{1}{2}$
Hay Hoists and Carrier.....	2-5
Threshing, Cleaning and Sacking..	3-20
Feed Grinder.....	4-15
Horse Groomer.....	1

Small Power Motors at Low Prices.

Direct and Alternating Current.

\$13.00 to \$15.00

Direct Current.



These are fractional horse-power motors, built of high grade material, carefully designed and constructed to give excellent service in the home and meet the requirements of all users of small motors. In the home they can be used to operate washing machines, churns, ice cream freezers, grinders and many other devices. Dentists, mechanics, blacksmiths, jewelers, garages and many others have work for these motors.

Cast iron frame, phosphor bronze bearings of ample size. High carbon steel shaft, $\frac{1}{2}$ inch in diameter, and felt wick oil cups.

Windings are made of high grade enameled cotton covered wire, impregnated with insulating compound to withstand any reasonable amount of moisture. Binding posts are conveniently located for electrical connections.

All motors are finished in black enamel with brass trimmings.

Motors can be operated on 105 to 115-volt current. Decrease in voltage decreases speed. Be sure to state voltage and whether you have direct or alternating current. If alternating current give number of cycles. The prices below do not include cord and plug. Cord may be connected to any lamp socket. Be sure to select motor large enough for your work and also suited to your current, direct or alternating.

Flat face pulleys $1\frac{1}{2}$ or 2 inches in diameter by 2-inch face, \$1.00 extra. State diameter wanted.

60-Cycle, 105 to 115-Volt Alternating Current Motors.

Catalog No.	57H7571	57H7572	57H7573	57H7574	57H7586	57H7587	57H7588
Horse-power	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$
Shipping weight, pounds.	19	21	24	24	18	20	22
Speed, R. P. M.	1,725	1,725	1,775	1,710	1,800	1,800	1,800
Height, inches.	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Diameter, inches.	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Length over all, inches.	7 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$
Size of pulley, inches.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Size of round belt, in.	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$
Price, each.	\$13.00	\$14.00	\$15.00	\$16.00	\$13.00	\$14.00	\$15.00

105 to 115-Volt Direct Current Motors.

Catalog No.	57H7561	57H7562	57H7563
Horse-power	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$
Shipping weight, lbs.	21	23	27
Price, each.	\$13.65	\$15.00	\$17.75

Utility Motors.

$\frac{1}{10}$ Horse-Power.

$\frac{1}{20}$ Horse-Power.

Direct and Alternating Current.

These Utility Motors are the same quality and construction as our power motors. There are a great many uses around the home or office for a motor of this type. They are not only suited for grinding and buffing, but can be used to drive small machines and household devices, such as washing machines, churns and ice cream freezers. Each motor is equipped with a grinding wheel 5 inches in diameter by $\frac{1}{2}$ inch wide, a buffing wheel 5 inches in diameter, and a double grooved pulley. These motors run at 1,800 revolutions per minute and are larger than the average utility motors, which usually run several thousand revolutions per minute. Slower speed means longer life and better service.



Motors will operate on 105 to 115-volt current. Be sure to order motor to suit your current. Flat face pulleys $1\frac{1}{2}$ or 2 inches in diameter by 2-inch face, \$1.00 extra. State diameter wanted.

Motors will operate on 105 to 115-volt current. Be sure to order motor to suit your current. Flat face pulleys $1\frac{1}{2}$ or 2 inches in diameter by 2-inch face, \$1.00 extra. State diameter wanted.

60-Cycle, 105 to 115-Volt Alternating Current Utility Motors.

Catalog No.	57H7565	57H7566	57H7567	57H7568
Horse-power.	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$
Shpg. wt., lbs.	21	23	25	27
Price, each.	\$13.65	\$15.00	\$16.65	\$17.75

105 to 115-Volt Direct Current Utility Motors.

Catalog No.	57H7560	57H7561	57H7562	57H7563
Horse-power.	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$
Shpg. wt., lbs.	21	23	25	27
Price, each.	\$13.65	\$15.00	\$16.65	\$17.75

Flexible Cord With Terminals and Plug.



No. 57H7590 To use with Power and Utility Motors. Cord of standard quality. Length, 15 feet. Shipping weight, 12 ounces.

Price, complete.....\$1.20

Fractional Horse Power Electric Motors

One-Sixth to One-Half Horse-Power, Alternating Current, 110 Volts.

Washing machines, cream separators, churns, pumps and many other machines requiring a small amount of power can be run with these motors. You can run your lathes, drills and forge blowers in your workshop, or the small feed grinder, etc., in your barn.

These single phase alternating current motors are built by the same company that makes the direct current motors listed to the right and are almost identical in appearance. The manufacturers are a well known company whose reputation is an assurance that the details of design are correct.

Details of Construction.

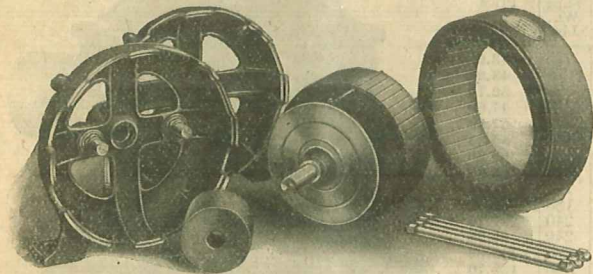
All single phase (two-wire) alternating current motors have to have some means for making them self starting. These motors are of the self starting split phase type; just close the switch and it starts.

For those interested in the technical details it may be stated that starting is accomplished by means of a separate field winding of a fewer number of turns and of smaller size wire than the main field winding. This winding produces somewhat the same magnetizing field as a two-phase motor and furnishes the necessary torque for starting. When the speed attained by the motor is such that a single phase winding can easily carry the full load, the auxiliary winding is automatically cut out by a centrifugal switch. This switch is rugged in its construction and positive in its action.

Ring oiled bearings are used on the ½ horse-power motors and wick oiled bearings on the smaller sizes. Pulleys are furnished in the sizes shown without additional cost.

How to Order

Before you order you must find out whether you have direct current or alternating current, the voltage, and in the case of alternating current, the frequency. The motors listed below to the left will operate only on alternating current of 110 volts and 60 cycles. If you do not know, tell us how the name plate of your electric meter is marked, or ask the company supplying you with power. They will gladly tell you.

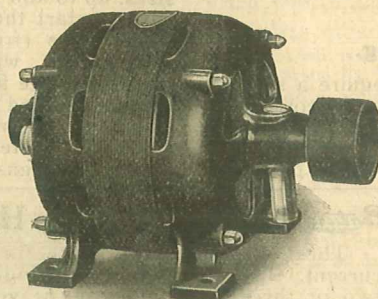


110-Volt 60-Cycle Single Phase Alternating Current Fractional Horse-Power Motors.

Catalog No.	Horse-Power	Syn-chron-Speed	Pulley Size	Bore	Lgth. of Shaft	Hgt. of Motor Frame	Approx. Shpg. Lbs.	Price
57H7535½	½	1,200	2½x1½	5/8	11½	7½	7½	\$19.75
57H7536½	¾	1,800	2½x1½	5/8	11½	7½	7½	20.15
57H7537½	1	1,200	2½x1½	5/8	11½	7½	7½	22.90
57H7538½	1½	1,800	3½x2	¾	13¾	9¾	8¾	31.75
57H7539½	2	1,200	4½x2½	¾	13¾	9¾	8¾	37.00

One-Sixth to One-Half Horse-Power, Direct Current, 110 Volts.

These motors are built by a company whose world wide reputation makes their reliability unquestionable. They are compact, neat, handsome and thoroughly dependable. They are all compound wound, giving them a higher starting torque than shunt wound motors.



The direct and alternating current motors listed on this page are almost identical in external appearance, and will be found applicable to the same small power operations in the home, store, shop or barn. Many of the devices mentioned on page 4, such as bread mixers, coffee mills, meat choppers, machine tools and small feed grinders can be operated.

Simple Rugged Construction.

The picture below shows one of the ½ horse-power motors taken apart to give you an idea of how well built these motors are. The bearings of the ⅓, ¼ and ⅕ horse-power motors are wick oiled from large cups, which can be seen in the central picture, while the ½ horse-power machines have ring oiled bearings, as shown below. Pulleys are furnished without additional cost.

All dimensions in the accompanying lists are given in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

Easy to Operate.

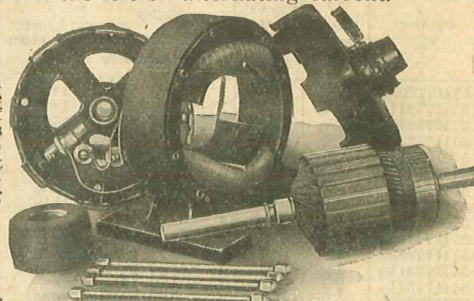
It is intended that these direct current motors shall be started merely by closing the switch. In a very few cases where the motors are required to start under full load it may be desirable to use starting boxes with the ½ horse-power motors. We are prepared to furnish starters for these at an additional cost of \$3.80.

How to Order

Before you order be sure to inquire of the company supplying you with power whether they are furnishing you with direct or alternating current, and the voltage, or tell us what is on the name plate of your electric meter. The power company will be glad to tell you. The motors at the right below operate on direct current of 110 volts only, and those at the left on alternating current.

Six Shipping Points.

The motors listed on this page can be shipped from any of the warehouses named below, reducing the freight charges to a minimum and assuring quick delivery.
BOSTON, MASS.
CHICAGO, ILL.
CINCINNATI, OHIO.
ST. LOUIS, MO.
NEW YORK, N. Y.
PHILADELPHIA, PENN.



110-Volt Direct Current Fractional Horse-Power Motors.

Catalog No.	Horse-Power	Approx. Full Load Speed	Pulley Size	Bore	Lgth. of Shaft	Hgt. of Motor Frame	Approx. Shpg. Lbs.	Price
57H7520½	½	1,100	2½x1½	5/8	9¼	7½	6¾	\$15.20
57H7521½	¾	1,700	2½x1½	5/8	11½	7½	7¾	19.10
57H7522½	1	1,100	2½x1½	5/8	11½	7½	7¾	19.95
57H7524½	1½	1,100	2½x1½	5/8	13½	9¾	8¾	21.10
57H7525½	2	1,700	3½x2	¾	13¾	9¾	8¾	31.25
57H7526½	3	1,100	4½x2½	¾	13¾	9¾	8¾	36.75

Alternating Current *Century* Motors

Single Phase, 60-Cycle, 110 and 220-Volt Repulsion-Induction Type.

Century motors are widely known for their excellent characteristics and their reliability of service. They operate with a high efficiency and a high power factor. They will develop a starting torque (or pull) of not less than $2\frac{1}{2}$ times full load torque, and are guaranteed to bring up to speed a load equal to at least $1\frac{1}{2}$ times their rated output. They will carry temporary overloads of 50 per cent.

They Are Self Starting.

Century motors are self starting and require a smaller starting circuit than split phase motors, such as listed opposite. These motors have especially designed commutators and brushes which are in service only while starting. When they nearly reach full speed, a governor

removes the brushes from the commutator and short circuits the armature windings. Technically these motors are said to start as repulsion motors and run as induction motors.

Low Starting Current.

Century motors take an initial current (at the time of closing the switch) of only $2\frac{1}{2}$ to 3 times full load running current, while split phase motors take as high as 5 to 7 times full load current. With the smaller sizes, up to and including 5 horse-power, all that is necessary to start the motor is to close the line switch. For larger sizes (from $7\frac{1}{2}$ horse-power up) if you want a starting box, write us for prices, giving the voltage of your line. The fact that these motors take a small starting current has led the electric lighting companies in many places to recommend their use, because they do not appreciably affect the voltage regulations of the line—they do not cause the lights to fluctuate.

"M" Type *Century* Motors, $\frac{1}{8}$ to $\frac{1}{4}$ Horse-Power

The "M" type motors are for the usual 110-volt 60-cycle alternating current. These motors are all single phase and can be operated from single, two or three-phase lines, if the voltage and frequency are correct. They start by merely closing a switch.

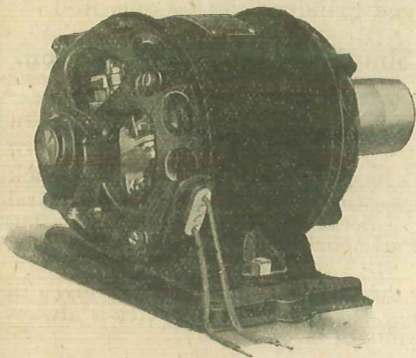
These "M" type motors are only made in sizes up to $\frac{1}{4}$ horse-power. They are light. They are equipped with sliding bases and are clamped to these bases by two bolts, one of which may be seen in the illustration.

The pulley which we furnish with the $\frac{1}{8}$ horse-power motors is of the double flange type; others are of the crown face type.

Before you order be sure you have alternating current of 110 volts, and 60 cycles or 7,200 alternations.

All dimensions given in the table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next.

These motors are shipped direct from the factory in ST. LOUIS, MO.



$\frac{1}{4}$ Horse-Power "M" Type Motor.

Catalog No.	Horse-Power	Approximate Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shpg. Wt., Lbs.	Price
			Size	Bore			Length	Width		
57H7594 $\frac{1}{8}$	$\frac{1}{8}$	1,750	1 $\frac{3}{4}$ x1 $\frac{1}{2}$	$\frac{1}{2}$	10 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	35	\$24.15
57H7595 $\frac{1}{8}$	$\frac{1}{8}$	1,165	1 $\frac{3}{4}$ x1 $\frac{1}{2}$	$\frac{1}{2}$	10 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	38	27.30
57H7596 $\frac{1}{8}$	$\frac{1}{8}$	1,750	2 x2	$\frac{1}{2}$	10 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	38	27.30
57H7597 $\frac{1}{8}$	$\frac{1}{8}$	1,165	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	12 $\frac{1}{4}$	7 $\frac{1}{2}$	9 $\frac{3}{4}$	6 $\frac{1}{2}$	52	33.60
57H7598 $\frac{1}{4}$	$\frac{1}{4}$	1,750	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	12 $\frac{1}{4}$	7 $\frac{1}{2}$	9 $\frac{3}{4}$	6 $\frac{1}{2}$	52	33.60

"P" Type *Century* Motors, $\frac{1}{6}$ to 10 Horse-Power

Interchangeable 110 and 220-Volt, 60-Cycle, Single Phase, Alternating Current.

The "P" type motors in the following list are wound interchangeably for 110 and 220-volt 60-cycle circuits and will operate satisfactorily on voltages from 100 to 115 or 200 to 230 by properly connecting. Instructions are furnished with each motor.

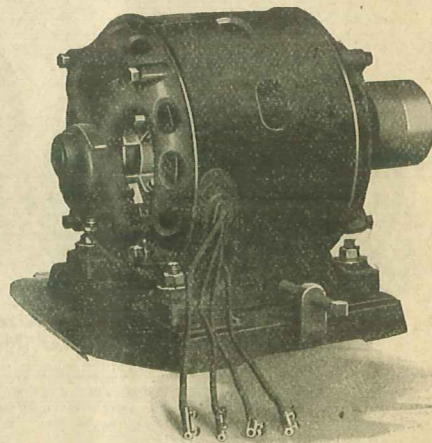
The prices shown include crown pulleys and sliding bases. Before ordering be sure you have alternating current of 110 or 220 volts, and 60 cycles or 7,200 alterna-

tions. Tell us what is on the name plate of your electric meter or ask the company supplying you with power what kind of current it is. They will gladly tell you.

All dimensions given in table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next.

These motors are shipped from ST. LOUIS, MO.

Catalog No.	Horse-Power	Approximate Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shpg. Wt., Lbs.	Price
			Size	Bore			Lgth.	Width		
57H7720 $\frac{1}{6}$	$\frac{1}{6}$	1,165	2 x2	$\frac{5}{8}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	\$ 43.20
57H7721 $\frac{1}{6}$	$\frac{1}{6}$	1,750	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	43.20
57H7722 $\frac{1}{6}$	$\frac{1}{6}$	1,165	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	14 $\frac{3}{8}$	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	85	52.70
57H7723 $\frac{1}{6}$	$\frac{1}{6}$	1,750	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	47.60
57H7724 $\frac{1}{6}$	$\frac{1}{6}$	1,165	2 $\frac{1}{2}$ x2 $\frac{1}{2}$	$\frac{5}{8}$	14 $\frac{3}{8}$	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	185	57.10
57H7725 $\frac{1}{6}$	$\frac{1}{6}$	1,750	3 x3	$\frac{3}{4}$	15 $\frac{1}{2}$	11 $\frac{1}{2}$	13 $\frac{1}{2}$	7 $\frac{5}{8}$	135	55.25
57H7726 $\frac{1}{6}$	$\frac{1}{6}$	1,165	3 x3	$\frac{3}{4}$	15 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	10	140	69.90
57H7727 $\frac{1}{6}$	$\frac{1}{6}$	1,750	4 x3	$\frac{3}{4}$	15 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	10	140	69.90
57H7728 $\frac{1}{6}$	$\frac{1}{6}$	1,165	4 x3	$\frac{3}{4}$	17 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	10	185	86.40
57H7729 $\frac{1}{6}$	$\frac{1}{6}$	1,750	4 x3	$\frac{3}{4}$	17 $\frac{1}{2}$	13 $\frac{1}{2}$	14 $\frac{1}{2}$	10	185	81.25
57H7730 $\frac{1}{6}$	1	1,165	4 x4 $\frac{1}{2}$	1	21 $\frac{1}{2}$	13 $\frac{1}{2}$	16 $\frac{1}{2}$	10	240	97.75
57H7731 $\frac{1}{6}$	1 $\frac{1}{2}$	1,750	4 x4 $\frac{1}{2}$	1	21 $\frac{1}{2}$	13 $\frac{1}{2}$	16 $\frac{1}{2}$	10	240	97.50
57H7732 $\frac{1}{6}$	2	1,750	4 x4 $\frac{1}{2}$	1 $\frac{3}{8}$	23	19	18	12 $\frac{7}{8}$	285	114.30
57H7733 $\frac{1}{6}$	2	1,165	4 x4 $\frac{1}{2}$	1 $\frac{3}{8}$	22 $\frac{3}{8}$	20 $\frac{1}{2}$	18 $\frac{1}{2}$	14 $\frac{3}{8}$	365	139.70
57H7734 $\frac{1}{6}$	3	1,750	4 x4 $\frac{1}{2}$	1 $\frac{3}{8}$	22 $\frac{3}{8}$	20 $\frac{1}{2}$	18 $\frac{1}{2}$	14 $\frac{3}{8}$	365	139.70
57H7735 $\frac{1}{6}$	3	1,165	5 x4 $\frac{1}{2}$	1 $\frac{7}{8}$	27 $\frac{1}{2}$	21 $\frac{3}{8}$	21 $\frac{3}{8}$	16 $\frac{1}{2}$	465	165.00
57H7736 $\frac{1}{6}$	4	1,750	5 x4 $\frac{1}{2}$	1 $\frac{7}{8}$	27 $\frac{1}{2}$	21 $\frac{3}{8}$	21 $\frac{3}{8}$	16 $\frac{1}{2}$	465	165.00
57H7737 $\frac{1}{6}$	5	1,750	5 x4 $\frac{1}{2}$	1 $\frac{7}{8}$	27 $\frac{1}{2}$	21 $\frac{3}{8}$	21 $\frac{3}{8}$	16 $\frac{1}{2}$	465	171.50
57H7738 $\frac{1}{6}$	5	1,165	6 x5 $\frac{1}{2}$	1 $\frac{7}{8}$	29 $\frac{1}{2}$	22 $\frac{3}{8}$	23 $\frac{3}{8}$	16 $\frac{1}{2}$	610	228.50
57H7739 $\frac{1}{6}$	5	870	7 x5 $\frac{1}{2}$	1 $\frac{11}{16}$	28 $\frac{1}{2}$	25 $\frac{3}{8}$	26 $\frac{3}{8}$	16 $\frac{1}{2}$	700	277.00
57H7740 $\frac{1}{6}$	7 $\frac{1}{2}$	1,750	6 x5 $\frac{1}{2}$	1 $\frac{7}{8}$	29 $\frac{1}{2}$	22 $\frac{3}{8}$	23 $\frac{3}{8}$	16 $\frac{1}{2}$	610	232.00
57H7741 $\frac{1}{6}$	7 $\frac{1}{2}$	1,165	7 x5 $\frac{1}{2}$	1 $\frac{11}{16}$	28 $\frac{1}{2}$	25 $\frac{3}{8}$	26 $\frac{3}{8}$	16 $\frac{1}{2}$	700	277.00
57H7742 $\frac{1}{6}$	7 $\frac{1}{2}$	870	8 x6 $\frac{1}{2}$	1 $\frac{11}{16}$	28 $\frac{1}{2}$	25 $\frac{3}{8}$	26 $\frac{3}{8}$	16 $\frac{1}{2}$	745	356.00
57H7743 $\frac{1}{6}$	10	1,750	7 x5 $\frac{1}{2}$	1 $\frac{7}{8}$	29 $\frac{1}{2}$	22 $\frac{3}{8}$	23 $\frac{3}{8}$	16 $\frac{1}{2}$	610	274.00
57H7744 $\frac{1}{6}$	10	1,165	8 x6 $\frac{1}{2}$	1 $\frac{11}{16}$	28 $\frac{1}{2}$	25 $\frac{3}{8}$	26 $\frac{3}{8}$	16 $\frac{1}{2}$	745	340.00
57H7745 $\frac{1}{6}$	10	870	9 x7 $\frac{1}{2}$	2 $\frac{1}{8}$	37 $\frac{3}{4}$	30 $\frac{1}{4}$	32 $\frac{1}{2}$	17 $\frac{1}{4}$	1,385	406.00

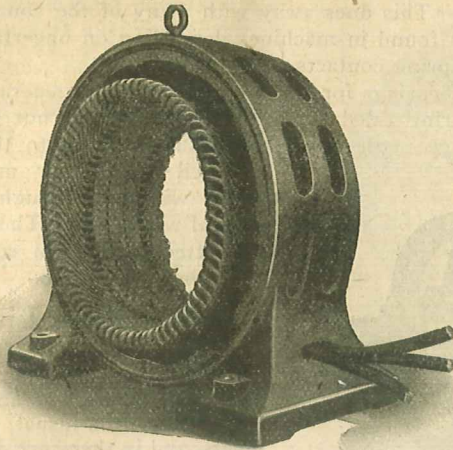


2 Horse-Power Century Motor.

Two and Three Phase Motors

110 and 220-Volt, 60-Cycle, Alternating Current, Squirrel Cage Type.

The simplicity and durability as well as the excellent operating characteristics and advantages in transmission of power make these motors very



The Stator.

desirable for classes of work requiring a large amount of power at a considerable distance from the source of supply. These motors require little attention other than an occasional draining and filling of the oil wells. They offer an additional advantage in point of safety where inflammable dust, lint or gases exist, because they have no moving contacts such as commutators and brushes where sparking may occur.

The accompanying illustrations show the stator (or stationary part) and the rotor (or rotating part) of our polyphase induction motors of the squirrel cage type. These two parts with the end frames and bearings constitute all the working parts of the motor. The simplicity of this type of machine is at once apparent.

Mechanical Features

Two and three-phase motors of this type are self starting and require no electrical connections between

the stator and the rotor, no brushes or moving contacts. It will be seen that this construction makes for long life. The rotating part of these machines, the rotor, is of the rugged type that gives these machines the name "squirrel cage."

The bearings of our squirrel cage motors are of the ring oiled type and are liberally proportioned. The oiling rings, which dip into large oil wells, carry a steady stream of oil up over the bearings. The oil wells are fitted with drain cocks for removing the old oil.

Unless otherwise ordered these motors are furnished with a cast iron sliding base. The motors are fastened to the bases by bolts of sufficient size to permit mounting on the side wall or ceiling. The motors will be shipped as floor type unless the order requests us to shift the end frames to the position for wall or ceiling mounting.

Our Price Lists

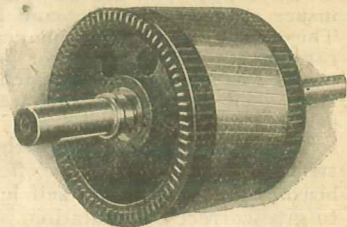
The accompanying price lists cover 110 and 220-volt, 60-cycle, two and three-phase alternating current motors from ½ to 20 horse-power. Motors of 7½ horse-power and larger are not built for 110 volts. Starters are not furnished with the 5 horse-power and smaller motors but are included in the prices for larger sizes. Pulleys are furnished of the dimensions shown.

We have attempted to give some approximate dimensions of the motors for the convenience of our customers. Where accurate dimensions are required we suggest that you write for certified figures. All these dimensions are in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

Be sure to state whether you want your motor for 110 or 220-volt service and whether for two or three-phase circuits.

The power company will be glad to tell you what kind of current they will supply. Ask them for the voltage, the number of cycles and whether single, two or three-phase current. These motors will not operate on direct current or single phase alternating current.

All of the motors in this list are shipped from SOUTH-WESTERN OHIO.



The Rotor.

110 and 220-Volt Two and Three-Phase 60-Cycle Squirrel Cage Induction Motors.

Catalog No.	Horse-Power	Approx. Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Weight, Pounds	Price
			Size	Bore			Length	Width		
57H7820 ¹ / ₃	½	1,135	3x2 ¹ / ₂	1 ¹ / ₁₆	12 ¹⁵ / ₁₆	10 ¹ / ₄	12 ⁷ / ₈	8 ³ / ₄	85	\$ 64.00
57H7821 ¹ / ₃	¾	1,720	3x2 ¹ / ₂	1 ¹ / ₁₆	12 ¹⁵ / ₁₆	10 ¹ / ₄	12 ⁷ / ₈	8 ³ / ₄	85	60.00
57H7822 ¹ / ₃	¾	1,135	3x2 ¹ / ₂	1 ¹ / ₁₆	12 ¹⁵ / ₁₆	10 ¹ / ₄	12 ⁷ / ₈	8 ³ / ₄	100	70.00
57H7823 ¹ / ₃	1	1,720	3x2 ¹ / ₂	1 ¹ / ₁₆	12 ¹⁵ / ₁₆	10 ¹ / ₄	12 ⁷ / ₈	8 ³ / ₄	100	66.25
57H7824 ¹ / ₃	1	1,140	4x3 ¹ / ₂	1 ⁵ / ₁₆	15 ⁹ / ₁₆	11 ³ / ₄	14 ¹ / ₂	9 ³ / ₈	120	76.25
57H7825 ¹ / ₃	1½	1,720	4x3 ¹ / ₂	1 ⁵ / ₁₆	15 ⁹ / ₁₆	11 ³ / ₄	14 ¹ / ₂	9 ³ / ₈	120	73.00
57H7826 ¹ / ₃	1½	1,140	4x3 ¹ / ₂	1 ⁵ / ₁₆	15 ⁹ / ₁₆	11 ³ / ₄	14 ¹ / ₂	9 ³ / ₈	130	84.50
57H7827 ¹ / ₃	2	1,720	4x3 ¹ / ₂	1 ⁵ / ₁₆	15 ⁹ / ₁₆	11 ³ / ₄	14 ¹ / ₂	9 ³ / ₈	130	79.25
57H7828 ¹ / ₃	2	1,140	4x3 ¹ / ₂	1 ⁵ / ₁₆	16 ¹¹ / ₁₆	13 ⁵ / ₈	16 ⁷ / ₈	11 ⁷ / ₈	210	93.00
57H7829 ¹ / ₃	3	1,720	4x3 ¹ / ₂	1 ⁵ / ₁₆	16 ¹¹ / ₁₆	13 ⁵ / ₈	16 ⁷ / ₈	11 ⁷ / ₈	210	92.50
57H7830 ¹ / ₃	3	1,140	6x4	1 ³ / ₁₆	18 ¹ / ₂	17	19 ³ / ₄	13 ³ / ₄	280	113.00
57H7831 ¹ / ₃	5	1,720	6x4	1 ³ / ₁₆	18 ¹ / ₂	17	19 ³ / ₄	13 ³ / ₄	280	110.00
57H7832 ¹ / ₃	5	1,140	6x4	1 ³ / ₁₆	20 ³ / ₁₆	18 ¹ / ₈	19 ³ / ₄	13 ³ / ₄	320	142.50
57H7833 ¹ / ₃	7½	1,720	6x4	1 ³ / ₁₆	20 ³ / ₁₆	18 ¹ / ₈	19 ³ / ₄	13 ³ / ₄	490	206.00
57H7834 ¹ / ₃	7½	1,140	7x5	1 ³ / ₁₆	24 ⁷ / ₈	18 ¹ / ₄	19 ³ / ₄	13 ³ / ₄	545	240.00
57H7835 ¹ / ₃	7½	850	8x6	1 ⁷ / ₁₆	23 ¹ / ₁₆	24 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	670	297.50
57H7836 ¹ / ₃	10	1,750	7x5	1 ³ / ₁₆	24 ⁷ / ₈	18 ¹ / ₄	19 ³ / ₄	13 ³ / ₄	570	239.00
57H7837 ¹ / ₃	10	1,150	8x6	1 ⁷ / ₁₆	23 ¹ / ₁₆	24 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	695	299.00
57H7838 ¹ / ₃	10	850	9x7	1 ¹¹ / ₁₆	26 ⁵ / ₈	25 ³ / ₈	26 ¹ / ₂	17 ¹ / ₂	915	326.00
57H7839 ¹ / ₃	15	1,750	8x6	1 ⁷ / ₁₆	23 ¹ / ₁₆	24 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	695	292.00
57H7840 ¹ / ₃	15	1,150	9x7	1 ¹¹ / ₁₆	26 ⁵ / ₈	25 ³ / ₈	26 ¹ / ₂	17 ¹ / ₂	955	340.00
57H7841 ¹ / ₃	15	850	13x8 ³ / ₄	2 ³ / ₁₆	29 ³ / ₄	27 ¹ / ₂	28 ³ / ₄	19 ³ / ₄	1,095	409.00
57H7842 ¹ / ₃	20	1,750	9x7	1 ¹¹ / ₁₆	26 ⁵ / ₈	25 ³ / ₈	26 ¹ / ₂	17 ¹ / ₂	1,050	354.00
57H7843 ¹ / ₃	20	1,150	13x8 ³ / ₄	2 ³ / ₁₆	29 ³ / ₄	27 ¹ / ₂	28 ³ / ₄	19 ³ / ₄	1,190	409.00
57H7844 ¹ / ₃	20	850	13x8 ³ / ₄	2 ³ / ₁₆	29 ³ / ₄	27 ¹ / ₂	28 ³ / ₄	19 ³ / ₄	1,240	464.00

Constant Speed Direct Current Motors

110 and 220-Volt Shunt Wound Type

The type of motors described on this page have been given the name of "Constant Speed" motors by the electrical trade, because there is very little change in the speed of the motors with changes in the loads. They are single speed motors. These direct current motors conform to the method of rating adopted by the American Institute of Electrical Engineers, and are in every way high grade machines.

Construction

All of the motors and generators listed on this page and pages 5, 6, 7 and 8 are made by one well known company manufacturing motors and generators only.

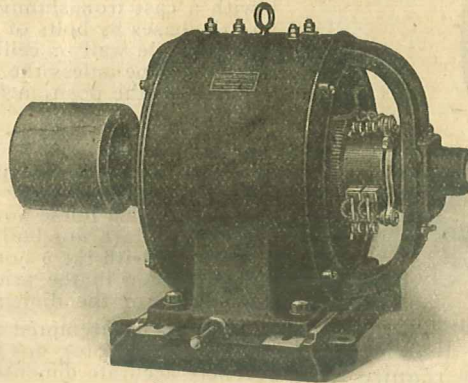
The frames of these motors are made of steel, giving a more compact and durable machine for a given output than would be practical with cast iron. The pole pieces for sizes up to 5 horse-power are steel with laminated tips. The larger sizes have laminated poles.

The armatures and commutators are particularly well designed. The commutator segments are made of hard drawn copper and are of sufficient number and size to insure sparkless running and low working temperature. These bars are of sufficient depth to give ample current carrying capacity even after years of service. The segments are insulated from each other and from the cast steel shell on which they are mounted by a carefully selected grade of mica.

Our brush holders are of the box type, simple in construction and thoroughly effective in operation. The brushes are high grade, self lubricating carbon, selected to give correct commutation. The commutators are sufficiently large to permit the use of large brushes, giving low current density. The brushes slide easily in the holders, correct pressure being secured by adjustable springs. A flexible, stranded copper "pig tail," fastened

securely in the brush and to the brush holder, carries the current. This does away with many of the commutator troubles found in machines depending on uncertain sliding or spring contacts.

The bearings for all of our motors and generators are of the ring oiled type. Although we do not wish to encourage neglect, we call your attention to the deep oil well on all our machines, which will hold enough oil for several weeks' run. These wells are fitted with drain cocks for removing the old oil.



2 Horse-Power Direct Current Motor.

Our Price List

The following price list covers only shunt wound 110 and 220-volt motors, because this type meets the usual requirements, and is, therefore, in greatest demand. The prices quoted on these motors include a cast iron sliding base (which permits the tightening of the belt), and a no-voltage release starting resistance.

The $\frac{1}{4}$ horse-power motor has slotted feet but no sliding base. We also furnish pulleys of the size indicated. The other dimensions given vary somewhat, and where accurate dimensions are required, as for setting base bolts in concrete, we suggest that you request certified dimensions. We will always furnish floor type motors, unless ceiling or wall mounting is requested.

In ordering from the accompanying lists, or in asking for quotations, be sure to give the horse-power, voltage and speed required.

These motors are shipped from the factory in Southwestern Ohio.

All dimensions are given in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

110 and 220-Volt Direct Current Shunt Motors

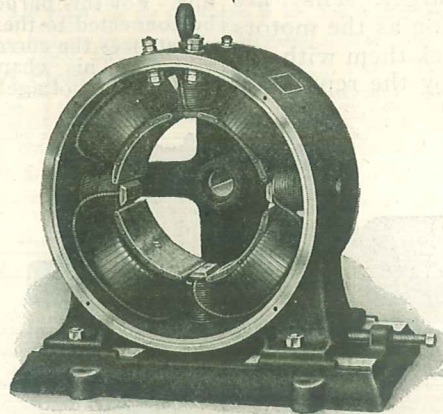
Catalog No.	Horse-Power	Approx. Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shipping Weight, Pounds	Price
			Size	Bore			Length	Width		
57H7632 $\frac{1}{3}$	$\frac{1}{4}$	1,750	2 $\frac{1}{2}$ x2	$\frac{7}{16}$	11 $\frac{3}{4}$	7 $\frac{3}{8}$	7 $\frac{3}{8}$	5 $\frac{7}{8}$	65	\$ 39.00
57H7633 $\frac{1}{3}$	$\frac{1}{2}$	1,750	3 x2 $\frac{1}{2}$	$\frac{9}{16}$	14 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{8}$	9	140	64.50
57H7634 $\frac{1}{3}$	$\frac{3}{4}$	1,300	3- x2 $\frac{1}{2}$	$\frac{11}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	79.50
57H7600 $\frac{1}{3}$	1	1,750	3 x2 $\frac{1}{2}$	$\frac{11}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	79.50
57H7601 $\frac{1}{3}$	1	850	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7602 $\frac{1}{3}$	$1\frac{1}{2}$	1,300	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7603 $\frac{1}{3}$	2	1,750	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7604 $\frac{1}{3}$	2	1,000	5 x3 $\frac{1}{2}$	$\frac{15}{16}$	25 $\frac{1}{2}$	20 $\frac{3}{8}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	420	144.50
57H7607 $\frac{1}{3}$	3	1,500	5 x3 $\frac{1}{2}$	$\frac{15}{16}$	25 $\frac{1}{2}$	20 $\frac{3}{8}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	420	146.00
57H7610 $\frac{1}{3}$	5	1,300	6 x4	$\frac{13}{16}$	27	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	630	203.00
57H7611 $\frac{1}{3}$	5	850	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	735	301.00
57H7613 $\frac{1}{3}$	$7\frac{1}{2}$	1,150	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	740	297.00
57H7614 $\frac{1}{3}$	$7\frac{1}{2}$	825	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	329.00
57H7615 $\frac{1}{3}$	$7\frac{1}{2}$	575	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,190	390.00
57H7617 $\frac{1}{3}$	10	1,750	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	750	310.00
57H7618 $\frac{1}{3}$	10	1,150	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	338.00
57H7619 $\frac{1}{3}$	10	760	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,190	384.00
57H7622 $\frac{1}{3}$	15	1,150	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,200	391.00
57H7623 $\frac{1}{3}$	15	750	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,575	510.00
57H7624 $\frac{1}{3}$	15	525	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,825	645.00
57H7626 $\frac{1}{3}$	$17\frac{1}{2}$	425	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	45 $\frac{5}{8}$	37 $\frac{7}{8}$	36	21 $\frac{3}{4}$	2,250	834.00
57H7629 $\frac{1}{3}$	20	960	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,600	512.00
57H7630 $\frac{1}{3}$	20	715	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,875	634.00
57H7631 $\frac{1}{3}$	20	480	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	45 $\frac{5}{8}$	37 $\frac{7}{8}$	36	21 $\frac{3}{4}$	2,275	845.00

Adjustable Speed Direct Current Motors

110 and 220-Volt, Commutating Pole Type

Adjustable speed motors are motors having a means of changing the speeds between certain limits. When they are set, they run at nearly constant speed, regardless of the amount of work being done.

The commutating pole type motor is peculiarly adapted to machine tool, printing press and similar work, because of the wide range of speed that can be obtained and the ease with which changes of speed are made. Speed variations as great as one-fourth to full speed can be obtained without the necessity of shifting belts or changing gear, and the only time that is required to make the change is the time it takes to throw the controlling lever to the proper position for the speed desired. When the lever is set the motor will run with almost constant speed, regardless of load. By using reversing controllers, commutating pole motors can be made to rotate in either direction at will.



Fields and Frame of Interpole Motor.

Construction.

An inspection of the accompanying illustration will disclose small commutating poles (sometimes called interpoles) midway between the main field poles. The purpose of these commutating poles is much involved with technical explanations. It may be said, however, that for the classes of work mentioned to the left, a higher efficiency and less heating of the commutator are obtained by the use of the commutating pole than can be obtained with the best shunt or compound motors operated under these conditions. Moreover, destructive sparking is entirely eliminated.

In other details of construction the parts, such as armatures, commutators, brush holders, bearings, etc., are exactly the same as in our shunt wound motors on the preceding page.

Our Price Lists.

Our price lists cover 110 and 220-volt direct current motors with pulleys, sliding bases and box type non-reversible controllers which serve both as starters and speed regulators. They are equipped with no-voltage release to cut the motor off the line in case the current fails.

The following lists show motors having a speed variation of 1 to 2 and of 1 to 4. We can also quote prices on motors having a speed variation of 1 to 3.

We call attention to our method of rating. The horse-power rating for all day service is given in the column marked 10 hr. When the motors are used only intermittently they will stand

much heavier loads as indicated by the horse-powers given in the 2 hr. column. The controllers which we furnish are designed for the heavier starting duty.

We give some approximate dimensions for the convenience of our customers. All dimensions are in inches and, in the case of pulleys, the diameter is first and width of face next.

In ordering be sure to state the voltage of the current supplied you, and to select the proper motor for the range of speed which you require.

All of these motors and starters are shipped from SOUTH-WESTERN OHIO.

110 and 220-Volt Direct Current Adjustable Speed Motors.

Field Control—Commutation Pole—Speed Variation 1 to 2.

Catalog No.	Horse-Power		Speed		Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shpg. Wt., Lbs.	Price
	10 hr.	2 hr.	Min.	Max.	Size	Shaft			Length	Width		
57H7650	1/4	1/2	415	830	3x2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	140	\$ 107.00
57H7651	1/2	1	625	1,250	3x2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	140	107.00
57H7652	3/4	1 1/2	850	1,700	3x2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	150	107.00
57H7653	1	2	415	830	4x3 1/2	1 5/16	22 5/16	15 3/8	16	12 1/8	235	134.00
57H7654	1 1/4	2 1/2	1,300	2,600	3x2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	150	108.25
57H7655	1 1/2	3	850	1,700	4x3 1/2	1 5/16	22 5/16	15 3/8	16	12 1/8	235	130.00
57H7656	2	4	1,300	2,600	4x3 1/2	1 5/16	22 5/16	15 3/8	16	12 1/8	235	131.00
57H7657	2 1/2	5	1,000	2,000	5x3 1/2	1 5/16	25 1/2	20 1/4	18 3/8	14 3/8	425	161.25
57H7658	3	6	650	1,300	6x4	1 3/4	27	23 3/4	22 1/8	15 1/4	650	215.15
57H7659	3 1/2	7	910	1,820	6x4	1 3/4	27	23 3/4	22 1/8	15 1/4	650	215.15
57H7660	4	8	875	1,750	8x5 1/2	1 7/8	30 5/8	24 1/4	25 1/8	13 1/8	750	273.30
57H7661	5	10	1,100	2,200	8x5 1/2	1 7/8	33 1/4	26 1/2	25 3/8	16 1/8	875	346.50
57H7662	6	12	825	1,650	8x5 1/2	1 7/8	33 1/4	26 1/2	25 3/8	16 1/8	875	353.00
57H7663	7 1/2	15	575	1,150	10x7 1/2	1 15/16	37 15/16	28 3/4	28 1/8	19 3/8	1,200	417.00
57H7664	8 1/2	17	375	750	10x7 1/2	1 15/16	35 7/8	33 1/4	32 1/8	18 3/8	1,575	532.00
57H7665	10	20	700	1,520	10x7 1/2	1 15/16	37 15/16	28 3/4	28 1/8	19 3/8	1,200	426.00
57H7666	10 1/2	21	475	950	10x7 1/2	1 15/16	35 7/8	33 1/4	32 1/8	18 3/8	1,600	543.50
57H7667	12 1/2	25	350	700	13x8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,875	654.00
57H7668	15	30	435	870	13x8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,875	689.00
57H7669	17 1/2	35	1,500	3,000	10x7 1/2	1 15/16	35 7/8	33 1/4	32 1/8	18 3/8	1,600	666.50
57H7670	20	40	525	1,050	13x8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,900	695.00
57H7671	25	50	375	750	13x8 3/4	2 1/8	45 3/8	37 1/8	36	21 3/8	2,300	795.00
57H7672	30	60	425	850	13x8 3/4	2 1/8	45 3/8	37 1/8	36	21 3/8	2,300	797.50
57H7673	40	80	715	1,430	13x8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,900	777.00
57H7674	50	100	480	960	13x8 3/4	2 1/8	45 3/8	37 1/8	36	21 3/8	2,300	899.00
57H7680	20	40	400	800	16x11	2 7/16	46 11/16	39 3/8	39 3/8	21	2,825	1,058.00
57H7681	25	50	325	650	16x11	2 7/16	48 3/16	40 1/4	39 3/8	22	3,225	1,192.00

110 and 220-Volt Direct Current Adjustable Speed Motors.

Field Control—Commutation Pole—Speed Variation 1 to 4.

Catalog No.	Horse-Power		Speed		Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shpg. Wt., Lbs.	Price
	10 hr.	2 hr.	Min.	Max.	Size	Shaft			Length	Width		
57H7690	1/4	1/2	415	1,660	3x 2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	140	\$ 114.90
57H7691	1/2	1	625	2,500	3x 2 1/2	1 1/16	19 3/8	10 3/8	13	10 1/4	140	115.00
57H7692	3/4	1 1/2	415	1,660	4x 3 1/2	1 5/16	22 5/16	15 3/8	16	12 1/8	235	139.00
57H7693	1	2	625	2,500	4x 3 1/2	1 5/16	22 5/16	15 3/8	16	12 1/8	235	140.00
57H7694	1 1/4	2 1/2	500	2,000	5x 3 1/2	1 5/16	25 1/2	20 1/4	18 3/8	14 3/8	425	174.60
57H7695	1 1/2	3	310	1,240	6x 4	1 3/4	26 15/16	23 3/4	22 1/8	15 1/4	630	224.00
57H7696	1 3/4	3 1/2	450	1,800	6x 4	1 3/4	26 15/16	23 3/4	22 1/8	15 1/4	630	224.00
57H7697	2 1/4	5	425	1,700	8x 5 1/2	1 7/8	30 5/8	24 1/4	22 1/8	13 1/8	725	283.50
57H7698	2 1/2	5 1/2	260	1,040	8x 5 1/2	1 7/8	33 1/4	26 1/2	25 3/8	16 1/8	870	355.00
57H7699	3	6	550	2,200	8x 5 1/2	1 7/8	33 1/4	26 1/2	25 3/8	16 1/8	870	360.50
57H7700	5	10	375	1,500	10x 7 1/2	1 15/16	37 15/16	28 3/4	28 1/8	19 3/8	1,190	430.50
57H7701	7 1/2	15	375	1,500	10x 7 1/2	1 15/16	35 7/8	33 1/4	32 1/8	18 3/8	1,575	549.00
57H7702	10	20	475	1,900	10x 7 1/2	1 15/16	35 7/8	33 1/4	32 1/8	18 3/8	1,575	593.00
57H7703	10 1/2	21	350	1,400	13x 8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,825	709.00
57H7704	12 1/2	25	435	1,740	13x 8 3/4	2 1/8	42 3/8	33 1/4	32 1/8	20 7/8	1,825	725.00
57H7705	15	30	375	1,500	13x 8 3/4	2 1/8	45 3/8	37 1/8	36	21 3/8	2,250	832.50
57H7706	15	30	300	1,200	16x11	2 7/16	46 11/16	39 3/8	39 3/8	21	2,750	981.00
57H7707	17 1/2	35	225	900	16x11	2 7/16	48 3/16	40 1/4	39 3/8	22	3,150	1,109.00
57H7708	20	40	350	1,400	16x11	2 7/16	46 11/16	39 3/8	39 3/8	21	2,750	982.00
57H7709	25	50	250	1,000	16x11	2 7/16	48 3/16	40 1/4	39 3/8	22	3,150	1,108.00
57H7710	20	40	325	1,300	16x11	2 7/16	48 3/16	40 1/4	39 3/8	22	3,150	1,234.00
57H7711	25	50	250	1,000	20x14	2 7/16	52 3/8	43 3/8	48 1/4	29	3,725	1,367.00

Direct Current Generators

125 and 250-Volt, 2-Wire, Compound Wound.

Our direct current generators are built by the same company that makes our direct current motors of 1 horse-power and larger. They are of the same high grade construction as the motors described on pages 5 to 7. We back them with our guarantee and feel well assured by the reputation and years of experience of the manufacturers that these generators will in every way give satisfactory service.

Operation

There is practically no difference between direct current dynamo electric machinery built for motors and for generators, aside from the angle of location of the brushes for good commutation. Changing any direct current motor to a generator is a comparatively simple process. However, only the shunt and compound wound machines are used to any extent at the present time, because only in these types can the voltage be maintained practically constant independently of the load connected to the generator. The necessity for maintaining a nearly constant voltage on lighting circuits will be appreciated when it is stated that the amount of light given by the ordinary tungsten lamp varies with the voltage, but is very much out of proportion to it, changing approximately as the square of the voltage. Therefore, it is very desirable to keep the voltage up to the rating of the lamps. On the other hand, the voltage should not rise greatly over the rating of the lamps, because this shortens their life.

We supply compound wound generators unless shunt machines are ordered for use with storage batteries.

Field Rheostats

While it is highly advantageous to have the voltage of a generator remain nearly constant, it is just as desirable

to have the voltage adjustable within limits to allow for speed variations of the driving engine, and to permit adjustment to the pressure losses in various lengths of line. For this purpose we furnish resistance rheostats to be connected to the fields. By the manipulation of these resistances the current through the field windings may be varied. This changes the magnetization and consequently the voltage of the machine.

Mechanical Details

The same high grade materials and workmanship are characteristic of both our motors and generators. The bearings are of the same large ring oiled type. The construction of the motor and generator armatures are identical.

These machines are supplied with cast iron sliding bases and an adjusting screw to take up the slack of the belt.

Our Price Lists

Our price lists cover two-wire compound wound generators for 125 and 250 volts at the full rated load and speed, allowing a sufficient margin over the usual 110 and 220 circuit voltages to permit a considerable departure from the rated speed and an appreciable line drop. Field rheostats of "front of board" type are included with generators of 5 K. W. and less. For 7½ K. W. and larger generators "back of the board" rheostats are furnished.

All dimensions given in table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next. The frame dimensions given are not all exact, due to the variations in castings, etc. When accurate dimensions are required we suggest that you request a certified dimension sheet on the size of generator in which you are interested.

The column headed "Lamps" gives the number of 17-candle power, 20-watt lamps, equivalent to just full load capacity of the generators.

These generators are shipped from the factory in SOUTHWESTERN OHIO.

Direct Current Generators 125 and 250-Volt, 2-Wire, Compound Wound.

Catalog No.	K. W.	Lamps	Speed R. P. M.	Pulley		Length of Shaft	Height of Generator	Size of Base		Approx. Shipping Wt., Lbs.	Price
				Size	Shaft			Length	Width		
57H7850½	¼	13	1,300	3x2½	9/16	147/16	9¾	12¾	9	90	\$ 60.90
57H7851½	⅜	17	1,800	3x2½	9/16	147/16	9¾	12¾	9	90	61.00
57H7852½	½	25	2,500	3x2½	9/16	147/16	9¾	12¾	9	90	61.00
57H7853½	⅝	25	1,150	3x2½	11/16	193¾	10¾	13	10¼	140	79.60
57H7854½	¾	38	1,550	3x2½	11/16	193¾	10¾	13	10¼	140	79.60
57H7855½	1	50	2,250	3x2½	11/16	193¾	10¾	13	10¼	140	79.60
57H7856½	1	50	1,050	4x3½	15/16	225/16	15½	16	12½	225	101.50
57H7857½	1½	75	1,550	4x3½	15/16	225/16	15½	16	12½	225	101.50
57H7858½	1½	75	950	5x3½	15/16	257/16	20¼	18¾	14¾	410	140.50
57H7859½	2	100	2,050	4x3½	15/16	225/16	15½	16	12½	225	101.50
57H7860½	2	100	1,200	5x3½	15/16	257/16	20¼	18¾	14¾	410	140.50
57H7861½	2½	125	775	6x4	1¾	2615/16	23¾	22½	15¼	620	197.00
57H7862½	3	150	1,850	5x3½	15/16	257/16	20¼	18¾	14¾	410	144.00
57H7863½	3	150	1,150	6x4	1¾	2615/16	23¾	22½	15¼	620	197.00
57H7864½	3½	175	725	8x5½	17/16	305¾	24¼	22½	13½	725	279.00
57H7865½	5	250	1,525	6x4	1¾	2615/16	23¾	22½	15¼	620	197.00
57H7866½	5	250	1,000	8x5½	17/16	305¾	24¼	22½	13½	725	287.00
57H7867½	5	250	725	8x5½	17/16	33¼	26½	25¾	16½	850	331.00
57H7868½	7½	375	1,350	8x5½	17/16	305¾	24¼	22½	13½	725	287.00
57H7869½	7½	375	1,050	8x5½	17/16	33¼	26½	25¾	16½	850	316.00
57H7870½	7½	375	650	10x7¾	115/16	3715/16	28¾	28½	19¾	1,175	390.00
57H7871½	10	500	1,450	8x5½	17/16	33¼	26½	25¾	16½	850	316.00
57H7872½	10	500	950	10x7¾	115/16	3715/16	28¾	28½	19¾	1,175	382.00
57H7873½	10	500	600	10x7¾	115/16	357¾	33¼	32½	185¾	1,575	505.00
57H7874½	12½	625	515	13x8¾	215/16	42¾	33¼	32½	207¾	1,825	629.00
57H7875½	15	750	1,300	10x7¾	115/16	3715/16	28¾	28½	19¾	1,175	382.00
57H7876½	15	750	900	10x7¾	115/16	357¾	33¼	32½	185¾	1,575	481.00
57H7877½	15	750	640	13x8¾	215/16	42¾	33¼	32½	207¾	1,825	629.00

Read About Our Electric Lighting Plants

\$83³⁵

WE CAN SAVE YOU MONEY

If you had one of our Electric Plants on your place you could have clean, safe lights in every room, in halls, basement, and all the closets. You could have a light at the gate, and convenient lights in every outbuilding, especially in barn and banyard. You could also have an electric suction cleaner, fans, motors and motor driven machines, electric irons, etc.

Write for our free catalog No. E57, called Electric Light and Power for Country Homes, describing in plain language how an electric plant is built and rated, and exactly how to figure a plant for your own place. You will be glad to have the book, if only for the information it. And it gives full descriptions and prices of nineteen different plants, one as low as \$83.35. All are fully guaranteed and our low prices will be a pleasant surprise. Write for the Catalog No. E57 today, before you forget.

A Plant for Only \$83.35.

This high grade little plant is built to fit the needs of those who ordinarily burn just two or three lamps at one time. The battery alone will light three 13-candle power 15-watt lamps four hours a night for four nights on one full charge. Or it will light two such lamps a night for eight nights on one full charge. And the generator alone will light twelve such lamps as long as run. Put up as many lights as you wish, but do not burn all at one time.

Plant comes complete, as shown in picture. No trouble to set up (we send full directions). 1/2 horse-power required to run generator. Use your own engine only a few hours a week.

No. 57H202 1/2 Electric Plant with 5 1/2-ampere 42-volt generator, 24-ampere hour 15-cell guaranteed enclosed battery, switchboard, belt, hydrometer and ten Mazda 13-candle power 15-watt lamps. Weight, about 200 pounds.

\$83.35

Price, complete. If you think you will need a larger plant write for our Electric Plant Catalog No. E57, sent free on request. Describes nineteen different electric plants.

"Lovolt" Electric Irons.



For low voltage circuits only. Saves many steps and keeps the rooms cool on ironing day. Exceptionally well made and nicely nickel plated. As it may be tilted up on end when not in use, it requires no stand. We furnish a special attachment plug for separate circuit which should be installed for the iron. Shipping weight, 7 pounds.

No. 57H5171 "LOVOLT" Electric Iron for 32 volts, consumes about 18 amperes. Complete with 5 feet 6 inches of cord and special plug. Price,.....\$4.25

No. 57H5172 "LOVOLT" Electric Iron for 60 volts, consumes about 8 amperes. Complete with 5 feet 6 inches of cord and special plug. Price,.....\$4.25

Mazda Tungsten Lamps.

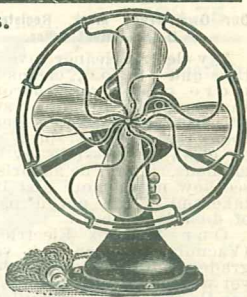
LOW VOLTAGE, drawn wire filament lamps, high quality. Be sure to order lamp of the correct voltage for your plant as shown below. Shipping weight, package of five, about 2 1/2 pounds.



Catalog No.	Candle Power	Watts	Volts	Price, Each	Price, per 100
57H6135	8	10	25	27c	\$24.30
57H6136	12	15	25	27c	24.30
57H6137	17	20	25	27c	24.30
57H6138	22	25	25	27c	24.30
57H6140	8	10	30	27c	24.30
57H6143	12	15	30	27c	24.30
57H6146	17	20	30	27c	24.30
57H6149	22	25	30	27c	24.30
57H6152	40	40	30	27c	24.30
57H6139	8	10	32	27c	24.30
57H6142	12	15	32	27c	24.30
57H6145	17	20	32	27c	24.30
57H6148	22	25	32	27c	24.30
57H6151	40	40	32	27c	24.30
57H6141	8	10	60	27c	24.30
57H6144	12	15	60	27c	24.30
57H6147	17	20	60	27c	24.30
57H6150	22	25	60	27c	24.30
57H6154	40	40	60	27c	24.30

"Lovolt" Electric Fans.

Enjoy a refreshing breeze on hot days and nights. You can attach a "LOVOLT" fan to any low voltage lighting socket. Well made, carefully finished, and guaranteed to please you. Motor and frame finished in black enamel; fan in polished brass. Designed to operate on low voltage circuits only.



No. 57H6232 8-Inch Four-Blade "LOVOLT" Electric Fan for 32 volts, consumes about 3 1/2 amperes. Complete with 6 feet of cord and plug. Shipping weight, about 13 pounds. Price,.....\$11.00

No. 57H6233 8-Inch Four-Blade "LOVOLT" Electric Fan for 60 volts, consumes about 1 1/2 amperes. Complete with 6 feet of cord and plug. Shipping weight, about 13 pounds. Price,.....\$11.00

No. 57H6234 12-Inch Four-Blade "LOVOLT" Electric Fan for 32 volts, consumes about 2 amperes. Complete with 6 feet of cord and plug. Shipping weight, about 27 pounds. Price,.....\$15.00

No. 57H6235 12-Inch Four-Blade "LOVOLT" Electric Fan for 60 volts, consumes about 1 amperes. Complete with 6 feet of cord and plug. Shipping weight, about 27 pounds. Price,.....\$15.00

No. 57H6236 12-Inch Four-Blade Oscillating "LOVOLT" Fan for 32 volts, consumes about 2 amperes. Complete with 10 feet of cord and plug. Shipping weight, about 40 pounds. Price,.....\$19.00

No. 57H6237 12-Inch Four-Blade Oscillating "LOVOLT" Fan for 60 volts, consumes about 1 amperes. Complete with 10 feet of cord and plug. Shipping weight, about 40 pounds. Price,.....\$19.00

Good Quality.

Slate bases, front connections and are for circuits of 250 volts, or less. direct current or alternating current.

Type C Knife Switches.

Not Fused, Open Link and N.E.C.

Fuses are not furnished. Switches for



No. 57H5892 Single Pole, Single Throw, Not Fused. No. 57H5880 30-ampere. Shipping weight, 1 lb. Price, each, .35c
No. 57H5881 60-ampere. Shipping weight, 1 lb. Price, each, .57c
No. 57H5882 Single Pole, Double Throw, Not Fused. No. 57H5882 30-ampere. Shipping weight, 1 1/2 lbs. Price, each, .60c
No. 57H5883 60-ampere. Shipping weight, 1 1/2 lbs. Price, each, .97c
No. 57H5884 Double Pole, Single Throw, Not Fused. No. 57H5884 30-ampere. Shipping weight, 2 lbs. Price, each, .54c
No. 57H5885 60-ampere. Shipping weight, 2 lbs. Price, each, .92c
No. 57H5886 Double Pole, Double Throw, Not Fused. No. 57H5886 30-ampere. Shipping weight, 2 1/2 lbs. Price, each, .86c
No. 57H5887 60-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.45
No. 57H5888 Three Pole, Single Throw, Not Fused. No. 57H5888 30-ampere. Shipping weight, 2 1/2 lbs. Price, each, .77c
No. 57H5889 60-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.34

No. 57H5894 Three-Pole, Double Throw, Not Fused. No. 57H5890 30-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.30
No. 57H5891 60-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$2.25
No. 57H5892 Single Pole, Single Throw, for Open Link Fuses. No. 57H5892 30-ampere. Shipping weight, 1 1/2 lbs. Price, each, .50c
No. 57H5893 60-ampere. Shipping weight, 1 1/2 lbs. Price, each, .83c
No. 57H5894 Double Pole, Single Throw, for Open Link Fuses. No. 57H5894 30-ampere. Shipping weight, 2 lbs. Price, each, .72c
No. 57H5895 60-ampere. Shipping weight, 2 lbs. Price, each, \$1.22
No. 57H5896 Three-Pole Single Throw, for Open Link Fuses. No. 57H5896 30-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.05
No. 57H5897 60-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.80
No. 57H5898 Single Pole, Single Throw, for N.E.C. Fuses. No. 57H5898 30-ampere. Shipping weight, 1 1/4 lbs. Price, each, .48c

No. 57H5899 60-ampere. Shipping weight, 1 1/4 lbs. Price, each, .82c
No. 57H5900 Double Pole, Single Throw, for N.E.C. Fuses. No. 57H5900 30-ampere. Shipping weight, 2 1/2 lbs. Price, each, .72c
No. 57H5901 60-ampere. Shipping weight, 2 1/2 lbs. Price, each, \$1.18
No. 57H5902 Double Pole, Double Throw, for N.E.C. Fuses. No. 57H5902 30-ampere. Shpg. wt., 3 1/2 lbs. Price, each, \$1.57
No. 57H5903 60-ampere. Shpg. wt., 3 1/2 lbs. Price, each, \$2.40
No. 57H5904 Three-Pole, Single Throw, for N.E.C. Fuses. No. 57H5904 30-ampere. Shipping weight, 3 lbs. Price, each, \$1.05
No. 57H5905 60-ampere. Shpg. wt., 3 lbs. Price, each, \$1.80
No. 57H5906 Three-Pole, Double Throw, for N.E.C. Fuses. No. 57H5906 30-ampere. Shpg. wt., 3 1/2 lbs. Price, each, \$2.50
No. 57H5907 60-ampere. Shpg. wt., 3 1/2 lbs. Price, each, \$3.85

Battery Hydrometers.

No. 57H6157 Syringe Hydrometer for enclosed batteries. Used to test gravity of storage batteries. Shipping weight, 10 ounces. Price, each,.....55c
No. 57H6162 Flat Body Hydrometer for open glass jar batteries. Shipping weight, 4 ounces. Price, each,.....56c

Cartridge Fuses.

Size, 1/2x3 inches. Shipping weight, each, 1 1/2 ounces.
No. 57H6186 5-ampere. No. 57H6189 20-ampere.
No. 57H6187 10-ampere. No. 57H6190 25-ampere.
No. 57H6188 15-ampere. No. 57H6192 30-ampere.
Price, 10 for 85c; each,.....9c
Size, 3/4x3 inches. Shipping weight, each, 3 ounces.
No. 57H6194 35-ampere. No. 57H6197 50-ampere.
No. 57H6195 40-ampere. No. 57H6198 55-ampere.
No. 57H6196 45-ampere. No. 57H6199 60-ampere.
Price, 10 for \$1.25; each,.....13c

Open Link Fuses.

Length of centers, 1 1/2 inches. Shipping weight, 6 oz.
No. 57H6167 5-ampere. No. 57H6170 20-ampere.
No. 57H6168 10-ampere. No. 57H6171 25-ampere.
No. 57H6169 15-ampere. No. 57H6172 30-ampere.
Price, 10 for 10c; each,.....16c
Length of centers, 3 inches. Shipping weight, 10 oz.
No. 57H6173 35-ampere. No. 57H6176 50-ampere.
No. 57H6174 40-ampere. No. 57H6179 55-ampere.
No. 57H6175 45-ampere. No. 57H6178 60-ampere.
Price for 10,.....22c

Switchboard.

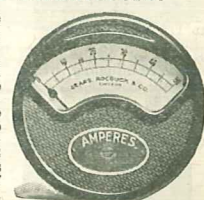
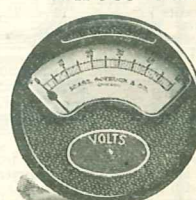
We are in a position to furnish switchboard panels when desired, and will be pleased to quote prices if you will tell us the equipment you would like.

Our standard switchboard panel has a voltmeter, ammeter and two double pole fused switches mounted upon it. The board is made of transite ebony asbestos, is strong and light, and is fitted with iron brackets for wall mounting. When the switchboard is ordered with the generator we will mount the field rheostat on the panel, as shown, if you wish it. The voltmeters and ammeters are the same as those shown to the right. It will be necessary for you to specify the scales you wish, except when ordered with a generator, also tell us how you want to use the switches. About five days required to ship.

No. 57H7879 1/2 Switchboard, complete with ammeter, voltmeter, two 60-ampere switches and wall brackets. Shipping wt., about 95 pounds. Price,.....\$26.50

Direct Current Voltmeters and Ammeters.

These instruments are of the D'Arsonval type. They are neat, accurate and durable. The voltmeters and ammeters are exactly the same in size and external appearance. They are intended for mounting on switchboards and are furnished in the back connected type only. Two lugs on the back of each instrument, 1/2 inch in diameter and 2 inches long, serve as terminals and for mounting. Diameter of instruments, 4 1/2 inches; depth, 2 1/2 inches. Shipping weight, about 4 1/2 pounds each.



VOLTMETERS

Catalog No.	Range in Volts	Price
57H7880	0-50	\$ 8.00
57H7881	0-80	8.25
57H7882	0-150	8.50
57H7883	0-300	10.50

AMMETERS

Catalog No.	Range in Amperes	Price
57H7890	0-25	\$ 8.00
57H7891	0-50	8.25
57H7892	0-100	8.50
57H7893	0-150	10.50

Electric Fans, Cleaners and Motors

Electric machines are clean, convenient, healthful, economical and cost only for actual work done. Electric fans keep you cool in Summer and circulate the warm air in Winter. Useful the year around. Our Energex Electric Cleaner sweeps and cleans much more thoroughly in less time. Save yourself the weariness of pedaling your sewing machine. Let our little motor run it for you.

Menominee Electric Fans.

Made with highly efficient motors. Shaft turned from steel. Bronze bearings fitted with compression grease cups. Fan blades and guard of lacquered brass. Balance of machine finished in black enamel. Made with swivel and trunion base so they may either be set upright or screwed against wall, etc., like a bracket. The 8-inch fan has three speeds and the 12-inch four speeds.

No. 57H6220 Menominee 8-Inch Electric Fan, suitable for either alternating or direct current of 105 to 115 volts. State which current. Shipping weight, 13 pounds. Price.....\$3.25
No. 57H6221 Menominee 12-Inch Electric Fan, complete, suitable only for alternating current of 105 to 115 volts. Shipping weight, 32 pounds. Price.....\$10.50

Energex Electric Suction Cleaner.

Our Own Trade Mark, Registered in U. S. Patent Office.

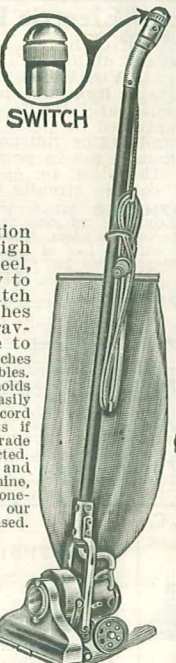
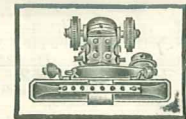
Any electric cleaner saves both time and labor; cleans much more quickly and thoroughly than ordinary broom or sweeper. Run an electric cleaner in a room that has just been swept as clean as possible by other methods. You'll be surprised to see how much more dirt it will take out. And not a particle of dust is raised.

Our Energex Electric Suction (Vacuum) Cleaner is a very high grade machine. Body made of steel, yet weighs only 12 pounds; easy to handle and move. Convenient switch in end of handle. Nozzle, 12 inches wide, has brush which loosens ravelings, threads, etc. Adjustable to thick or thin carpets. Body only 6 3/4 inches high easily gets under chairs and tables. Handle 44 inches long. Machine holds itself upright when not in use. Bag easily emptied. 21 feet 6 inches of electric cord furnished. Simple to apply attachments if wished. All the parts are of high grade material, carefully tested and inspected. Steel body has polished nickel plated and blue enamel finish. A high quality machine, equal to any sold elsewhere for at least one-third more. We will take it back at our expense if you are not more than pleased. Shipping weight, about 17 pounds.

This Cleaner Can Be Used Only In Homes That Have Electricity.

No. 57H7510 Energex Suction Cleaner for usual city alternating current of 105 to 115 volts. Price, complete.....\$19.50

No. 57H7511 Energex Suction Cleaner for 30 to 32-volt private lighting plant current. Price.....\$20.00



Menominee Oscillating Fan.

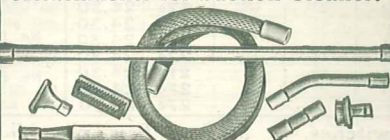
No. 57H6219 Popular 8-inch, four-blade oscillating fan, especially suitable for residence use. Automatically turns from side to side, throwing breeze to various parts of the room. Fan blades and guard of lacquered brass. Balance of machine black enamel finish. Efficient motor, three speeds. Can be set upright or screwed to wall, etc., like a bracket. Operates on the usual city alternating current of 105 to 115 volts.

Shipping weight, about 15 pounds. Price, complete with guard and attachment plug.....\$11.00

Electric Fan, \$4.25

No. 57H6230 Black finish with nickel plated standard, blades and brush holders. Breeze can be thrown at nearly any angle desired. Fan can be hung on wall. Costs about 1 cent to operate six hours. Operates on usual city current of 105 to 115 volts. Moving a single wire adapts fan to either direct or alternating current. 8 inches high, 7 inches wide, 4 inches deep, base 3 1/2 inches in diameter, fan about 6 inches in diameter, 5 feet of cord and plug. Shipping weight, about 3 1/2 pounds. Price, complete.....\$4.25

Attachments for Suction Cleaner.



Clean furniture, draperies, mattresses, cloths, woodwork, books, radiators, upholstery, corners, etc., much more thoroughly than beater, brush or dust cloth. Consist of the following parts: 7 feet 9 inches of fabric covered reinforced rubber hose; 3 feet 3 inches of nickel plated tube; nickel plated steel radiator or blower attachment; two attachments for special connections; polished attachment to receive hose; brush attachment; polished wall or upholstery tool. Fit our Energex Cleaner only. Shipping weight, about 7 pounds.

No. 57H7515 Price, complete.....\$5.75

Westinghouse Electric Fans.

Made by the Westinghouse Co., whose name on any piece of electrical goods is in itself a guarantee of quality. High grade material. Black oxide finish. Quiet running; ideal for home or office. Can either be set upright or screwed to wall, etc., like a bracket. We list two styles, straight and oscillating. The oscillating automatically moves from side to side, throwing the breeze to various parts of the room. Both styles operate on the usual city alternating current of 105 to 115 volts.

No.	Blades	Diam., Inches	Type	Shpg. Wt.	Price
57H6222	4	8	Straight	13 lbs.	\$ 9.95
57H6223	4	10	Straight	25 lbs.	12.95
57H6224	4	12	Oscillating	34 lbs.	14.00
57H6225	4	12	Straight	34 lbs.	14.90
57H6226	4	12	Oscillating	46 lbs.	19.00
57H6227	6	12	Straight	34 lbs.	15.30
57H6228	6	12	Oscillating	46 lbs.	19.75
57H6229	4	16	Straight	40 lbs.	18.00
57H6230	4	16	Oscillating	50 lbs.	22.50
57H6231	4	16	Straight	42 lbs.	19.00
57H6232	6	16	Oscillating	52 lbs.	23.85

Electric Sewing Machine Motor.

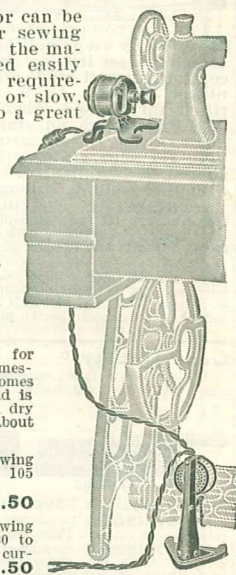
This well made motor can be quickly attached to your sewing machine without marring the machine in any way. Speed easily regulated to meet your requirements. Can be run fast or slow, as you wish. You can do a great deal more sewing without being worn out from running the machine.

The motor and controller need never be in the way, as they can be removed when the machine is not in use. Operates on city current of 105 to 115 volts, or 30 to 32-volt private lighting plant current. Uses little current. Plug can be attached to any convenient lamp socket. 9 feet 6 inches of cord furnished.

The motor is recommended for use in general household or domestic sewing. Cannot be used in homes that do not have electricity, and is not constructed to operate from dry batteries. Shipping weight, about 10 pounds.

No. 57H7550 Electric Sewing Machine Motor, complete, for 105 to 115-volt alternating current. Price.....\$8.50

No. 57H7551 Electric Sewing Machine Motor, complete for 30 to 32-volt private lighting plant current. Price.....\$8.50



Upright Portable Heater.

No. 57H5236

Especially adapted to heating small rooms, nurseries, bathrooms, offices, etc. Removes the chill and dampness when the fire is low, or when the weather during the day does not justify keeping up a fire.

It consists of a single heat unit mounted in a reflecting bell supported by a vertical standard with a base 6 1/2 inches in diameter. A rigid wire guard eliminates danger of contact with the heating element. Operates on either direct or alternating current of 105 to 115 volts. Price includes 8-foot cord. Height of heater, 15 inches. Shipping wt., about 5 pounds.

Price.....\$5.45



Popular Electric Toaster.

\$1.60

For 110-Volt Current.



HEATING DEVICES

Immersion Heater and Sterilizer.

No. 57H5250 This Sanitary Aluminum Immersion Heater affords a quick means for heating liquids. It is easily attached to any ordinary electric light socket and quickly heats water, milk or other liquids in which it may be immersed. It is useful wherever hot water is needed. Weighs only 2 ounces. Light and handy as a teaspoon. Each one comes complete with cord, attachment plug and switch on heater. Shipping weight, 5 ounces. Price.....\$2.15

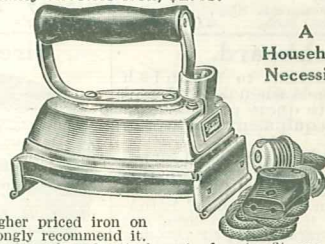
Quality Electric Iron, \$2.45.

Works on 108-115 Volts.

No. 57H5168

This "Quality" Electric Iron is nickel plated and polished all over, and has a black finished wood handle. It is well balanced and well finished in all details. This iron will compare favorably with any higher priced iron on the market and we strongly recommend it. Complete with 6 feet of cord and attachment plug to fit any lamp socket. Weight of iron, about 6 1/2 lbs. Shipping wt., about 10 lbs. Price, complete, including steel safety stand.....\$2.45

No. 57H5150 This dainty toaster will toast two slices of bread at the same time, and does the work quickly. It is nickel plated and polished. The perforated top can be used as a warming rack. Length, 5 inches; 6 inches high; 4 inches wide. Complete with 5 feet 6 inches of cord and plug. Shipping wt., about 3 lbs. Price.....\$1.60



A Household Necessity.

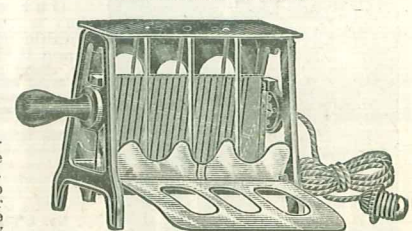
No. 57H5151 A very attractive toaster, nickel plated. The doors hold the bread in place. The bread is not dried out. Top may be used as warming rack for toast or coffeepot. Complete with cord and plug to fit any lamp socket. Shpg. wt., 2 1/2 lbs. Price.....\$2.10

Suspended Portable Heater.

No. 57H5235 This type of heater is similar to our No. 57H5236. This heater is designed to be supported from the electric trolley or lamp socket by simply screwing the plug into position. It consists of a single heat unit mounted in a reflecting bell with protecting guard, and short cord and plug. It will operate on alternating or direct current light circuits of 110 volts (the usual voltage). Shpg. wt., about 4 pounds. Price.....\$3.75



Star Electric Toaster.





Use Your Electricity for More Than Light

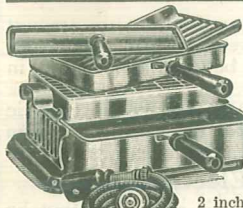
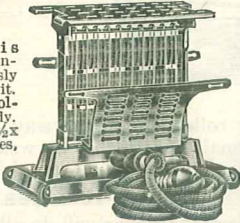
Your electric current will do so many other things for you besides supplying light. As a source of heat for cooking, ironing and other household purposes it is cleaner, more convenient, and more efficient than coal, wood or gas.

Majestic Percolator.

No. 57H5105 Make coffee right at your table and serve it piping hot. This handsome percolator not only looks good but is good. Made of rolled copper, heavily nickel plated. Height, 9½ inches. Capacity, 2½ pints. Cool ebony finish wood handle. A special fusible plug prevents any injury to the vessel, even if it should boil dry. Furnished with 6 feet of cord and plug. Operates from any electric light circuit with the usual city current of 105 to 115 volts. You will be proud to own one of these. Shipping weight, about 4½ pounds. Price.....\$6.15

Majestic Toaster.

No. 57H5153 Place this dainty toaster right on your dining table and serve deliciously fresh, warm toast direct from it. It toasts evenly and quickly. Polished nickel plated steel body. Height, 6½ inches. Base, 7½x3½ inches. Top, 3½x6½ inches, makes an excellent warming rack. Heating surface, 3½x4½ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. A pretty piece of table service. Shipping weight, about 2½ pounds. Price.....\$3.25

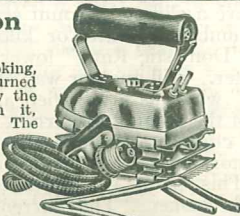


Majestic Combination Grill.

No. 57H5161 Attractive combination griddle, frying pan and broiler, all made of pressed steel, nickel plated and polished. The Majestic quality throughout. Cool ebony finish wood handles. Depth of frying pan, 1¼ inches; of broiler, 2 inches; of griddle, ¾ inch. Heating surface, 7½x4½ inches. Base of black finished steel, 6½x10 inches. Fiber feet; 6 feet of flexible cord. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 4½ pounds. Price.....\$4.50

Combination Iron and Stove.

No. 57H5169 A good looking, efficient iron which, when turned upside down and supported by the steel braces that come with it, forms an excellent small stove. The upper shelf of the stand has a groove in which to place a curling iron for heating. Cool ebony finish wood handle. Complete with 6 feet of cord and plug, steel braces and three-section stand. Operates from any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 9½ lbs. \$3.30 Price.....



Majestic Heating Pad.

Beats Any Hot Water Bottle.

No. 57H5229 A soft, comfortable heating pad that stays hot as long as the current is on. Construction shows Majestic quality throughout. Special switch on cord near pad controls it to three different heats—warm, medium hot and very hot. Convenient in sickness or during cold weather. Covering is warm wool and cotton mixture. Size, 14½x21½ inches. A washable white linen slip comes with it and 9½ feet of flexible cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shpg. wt., about 2½ lbs. \$6.15 Price.....



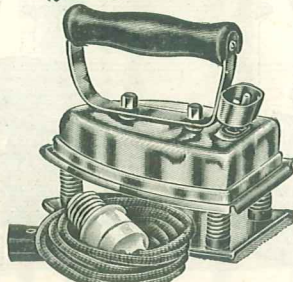
Automatic Heating Pad.

No. 57H5228 A very high grade heating pad, soft, flexible and adjustable to almost any temperature. The controller box with its dial gives you a range of 55 degrees, from warm to very hot. Covering of warm gray wool, easily removable and washable. Size, 14x18 inches. Furnished with 10 feet of electric cord and plug for any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 3 pounds. Price.....\$7.00

The Majestic Line.

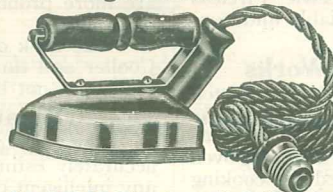
As regards quality, workmanship and finish, the Majestic line of heating utensils is among the best. The manufacturer is unusually careful to produce none but high grade goods. Through our economical business methods we are able to offer this fine line at about one-fifth below the regular retail prices.

Majestic Flat Iron.



No. 57H5170 No hot stove, no changing of irons necessary with this fine electric iron. The plug at the end of 6 feet of cord attaches to any lamp socket, so you can iron in any room in the house, or in the hotel when traveling. Handsomely nickel plated steel body; blue steel base which heats uniformly and retains heat well. The very careful construction insures long and satisfactory service. Cool ebony finish wood handle. Standard household weight (6 lbs.). Operates from any electric light circuit with the usual city current of 105 to 115 volts. We believe that you cannot buy a more satisfactory iron anywhere. Shpg. wt., about 7 lbs. \$3.25 Price.....

For Daughter and Mother.



No. 57H5164 A practical little iron, though it weighs only 1 pound. Little girls enjoy helping mother with it. Their mothers, too, find it excellent for pressing silks, neckwear and other small and dainty things. For travelers it is especially convenient. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Consumes only about one-eighth as much current as a 6-lb. iron. Shpg. wt., about 1½ lbs. 95c Price.....

Electric Liquid Warmer.

No. 57H5191 Liquid inside may be heated warm or hot as wished. Heats baby's milk just right. Current automatically shut off when desired temperature is reached. Full directions. 6 feet of cord and plug to attach to any lamp socket. Polished nickel plated. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Price does not include bottle. A wide mouth bottle fits it best, but any kind can be used with success. Shipping wt., about 4½ lbs. \$3.25 Price.....

No. 57H5192 Combined Egg Cooker and Liquid Warmer. Composed of one heater and attachments for egg cooking and liquid warming. Temperature and time controllable as with the above. Shipping weight, about 5 lbs. Price, without bottle.....\$3.75

Majestic Liquid Heater.

No. 57H5249 Quickly heats small amount of water, milk or other liquid. Quicker, yet more economical than a stove. Fine for the sick room, the nursery, traveling, quick shaving. Made of copper, nickel plated, with nickel plated steel rack. Majestic quality. Length, 6½ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 1 pound. Price.....\$3.25



Majestic Coffee Urn.

No. 57H5106 A beautifully designed and very efficient percolator. Makes your coffee right at the table and keeps it hot. Copper body, handsomely nickel plated. Cool ebony finish wood handles. Easily taken apart and cleaned. Capacity, 2½ pints. Height, 13¼ inches. A special fusible plug prevents any injury to the utensil even if it should boil dry. Furnished with 6 feet of cord and plug. Operates from any electric light circuit with the usual city current of 105 to 115 volts. A quality article through and through. Shipping weight, about 5 pounds. Price.....\$9.75



Majestic Chafing Dish.

No. 57H5130 A handsome electric heated chafing dish. No troublesome flame or dirt. Food pan and cover of solid copper, nickel plated and polished. Capacity, about 3 pints. A special fusible plug prevents injury to the vessel even should it boil dry. Pan has detachable ebony finish wood handle about 5½ inches long. Base made of brass, nickel plated. Diameter, 8½ inches. Ebony finish wood grips. Height, 8½ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. A quality utensil. Shipping weight, about 5½ pounds. Price.....\$9.00



Majestic Electric Radiator.

No. 57H5237 Fine for that cold bathroom, bedroom, small office, etc. Very attractive with its bright copper lining, polished nickel plated steel ends and black finish top and back. Quality there in every part. Body of sheet steel, 12 inches high exclusive of ebony finish wood handle. Size, 10½ inches wide, 5 inches deep. Furnished with 6 feet of flexible cord. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 7 pounds. Price.....\$5.30



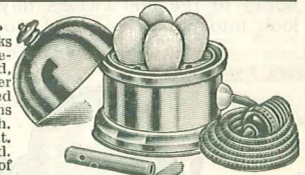
A Good Iron.

No. 57H5166 A 6-pound iron that saves many steps. Stays hot as long as current is on. Steel blue finished base; other metal parts polished nickel plated. Cool wood handle. Furnished with 6 feet of cord and plug which attaches to any lamp socket. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 9½ pounds. Price.....\$2.60



Electric Egg Cooker.

No. 57H5190 Cooks one to four eggs, soft, medium or hard as wished, without the tough outer lining common to boiled eggs. Automatically turns off current when through. Full directions with it. Attractively nickel plated. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 3½ pounds. Price.....\$3.25



Majestic Curling Iron.

Electric heated. Stays hot as long as current is on. No flame, no soot. Very well made and very attractive. Metal parts of copper and brass, nicely nickel plated. Mahogany finish handle. Length, 12 inches. Stand included, also 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Aluminum comb comes extra. This slips over the iron. With the current on and the comb thus heated, it will help dry the hair after washing.

No. 57H5252 Curling Iron without comb. Shipping weight, about 1½ pounds. Price.....\$3.25
No. 57H5253 Curling Iron with comb. Shipping weight, about 1¾ pounds. Price.....\$3.60



"MAGIC" Electric Fireless Cookers

Hot Meals Without a Hot Kitchen

TIME SAVED

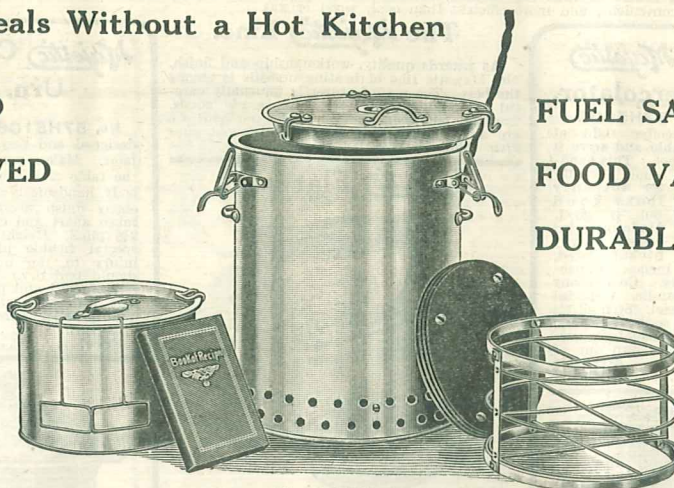
EFFORT SAVED

SAFE

FUEL SAVED

FOOD VALUES SAVED

DURABLE



No. 57H5260

Cooking by Electricity

Until recently cooking by electricity has been out of reach as far as the majority of the people were concerned. This was due to several causes, namely: The enormous cost of operating electric cooking stoves or ranges, due to the large amount of current consumed, the cost for current and the fire hazard and short life attached to the device. The first cost of the stove was in most cases out of reach of the average household, which feature alone kept many from having electric cooking in the home.

The advantages of electric cooking could be clearly seen, and after years of experimenting and testing the Electric Fireless Cooker is offered to you as a safe, economical, reliable and convenient electric cooking device.

How Our Electric Fireless Cooker Works

This cooker is built on the principle of the old time Dutch ovens, which were built of brick or stone, out in the open; the oven was fired until it attained a high temperature. The fire was then withdrawn, the food to be prepared was placed in the oven and the door sealed up tightly. The oven maintained the cooking heat for hours, and the food was slowly and thoroughly baked or roasted. The natural flavors were retained together with all the food value.

Our Electric Cooker is the 20th century application of this principle to the extent that most of the cooking is done after the current is turned off. The food is placed in the cooker, the current turned on. When steam issues from the vent valve the current should be turned off; the cooking will continue from the heat stored up in the heating unit and cooker.

The Advantages of Our Electric Cooker

The installation of the Electric Cooker in the home transforms the kitchen from a hot crowded room, requiring lots of tiresome routine work, to a cool, cheerful place. The cooker adds leisure hours to the housewife's day. No more bending or stooping to look into hot gas or coal stove ovens. When the baking is done

the cooker is easily rolled out of the way. On account of its size it is desirable for small apartments as well as large kitchens. To operate, simply turn the switch—no matches, no smoke, no odor.

What It Does

Our Electric Fireless Cooker will do all the work of the regular fireless cooker, which requires the heating of food and heat retainers before the food is placed in the cooker, and the Electric has none of these disadvantages.

Food cooked in the Electric Cooker has a minimum amount of shrinkage as against 10 to 20 per cent over open fire, the flavors are more pronounced and the food tastes better and is better in many ways.

The cook or housewife simply places the food in the Electric Cooker and turns on the current; the cooker does the rest. The food does not have to be cooked first nor any stoves heated.

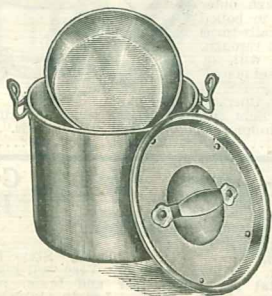
What It Costs to Cook Electrically

The cost for current for operating electric devices cannot be accurately estimated, as there are many variables which prevent any intelligent definite statement being given. The cost of current is based on a price for each kilowatt hour. This price varies in different localities. The policy of the central station also is a factor. Some companies have a sliding discount scale which sets the price according to the number of watts or kilowatts consumed; other companies have a "Domestic Rate," lower than the lighting rate, governed by the meter. Still another way of furnishing this current is on a "Flat Rate," which is a specified amount to be paid every month, regardless of the amount of current used.

The amount of current consumed may be regulated to a great extent by the operator; the current should always be turned off at the proper time. This point is covered in the Book of Recipes furnished with each cooker. The current consumption is very low—for instance, it takes a 5-pound roast about three hours to cook in any stove, but forty-five minutes current in the cooker gives

(Continued on page 13.)

Special Cooker Utensils

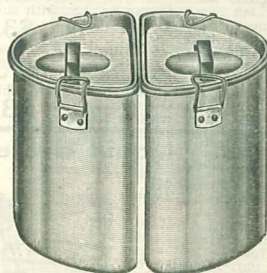


Double Boilers.

Double Boilers. For cooking cereals, etc. Seamless aluminum, in two sizes. Shipping weight, about 5 pounds.

No. 57H5135 Four-quart size. Inner vessel capacity, 2 quarts. Price, each.....\$1.80

No. 57H5137 Eight-quart size. Inner vessel capacity, 3 quarts. Shipping weight, 6 lbs. Price, each...\$2.70



Double Nesting Utensils.

No. 57H5139 Double Nesting Utensils. Made of seamless aluminum. Enables the operator to cook two different kinds of food at one time. Capacity, 3 quarts each. Shipping weight, about 5 pounds.

Price.....\$3.00

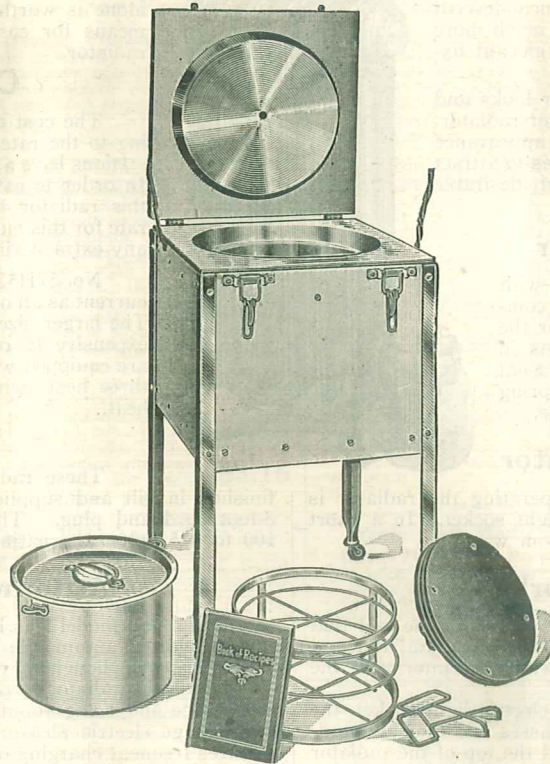


Triple Nesting Utensils.

No. 57H5141 Triple Nesting Utensils. By the use of the triple utensil set three different foods can be cooked at one time, thus affording a great saving in fuel. Capacity, 2 quarts each. Shipping weight, about 7 pounds.

Price.....\$3.35

"MAGIC" Electric Fireless Cookers



(Continued from page 12.)

all the heat needed to finish cooking. The current should be turned off at the end of the forty-five minutes, as it is being wasted. At the rate of 10 cents per kilowatt, forty-five minutes shows a cost of $4\frac{1}{2}$ cents, or about $1\frac{1}{2}$ cents per hour for the whole cooking operation. This cost is so low that it is a great saving over a coal or gas range.

Construction of Our Electric Fireless Cooker

Heating Unit—The heating unit is the heart of the Cooker and has therefore received a great deal of attention. It is wound for 600 watts at 110 volts, and is installed directly in the cooking compartments, where the valuable heat has little chance to escape. We can furnish this unit for 220 volts on special order.

Insulation—Next in importance is the insulation. Mineral wool and Kieselguhr combined are used, which makes a very high grade heat retainer.

Casing—The casing on the Cabinet type cooker is made of heavy sheet steel, finished in gray. The varnish is water and steam resisting and will stand rough usage. The casing on the Junior size is made of heavy sheet iron finished in aluminum. Both types are equipped with the patent vent valve and aluminum cooking compartment.

Fireproof—These Cookers have been indorsed by the Chicago Underwriters' Laboratories after a thorough and exhaustive series of tests. Every detail of safety has been carried out to the farthest point, with the result that the cooker can be used safely under all conditions.

Equipment

With each cooker is included necessary utensils: A seamless aluminum vessel, baking racks, discs and tongs, as shown in the illustration.

The Junior 8-Quart Size

No. 57H5260 This model was brought out to meet the demand for an inexpensive and efficient cooker of this kind. This model is the same as the Cabinet Model, with the exception of the case, which is made of heavy sheet iron finished in aluminum. The results obtained are exactly the same as with the Cabinet Model. Furnished complete with adjustable rack, on which ordinary utensils can be used, 8-quart utensil of seamless aluminum, baking disc, iron grate, lifting handles and instruction book. The Recipe Book is also included. Shipping weight, about 40 pounds.

Price.....\$13.00

Cabinet Electric Fireless Cooker

This model has the same capacity as the Junior, the only difference being in the style of mounting. This model is mounted, as shown, in a gray finished case of sheet iron, on four steel legs equipped with casters to facilitate moving. Shipping weight, about 100 pounds.

No. 57H5263 Cabinet Electric Fireless Cooker, 8-quart size. Price, complete.....\$21.00

No. 57H5266 Same as No. 57H5263, 12-quart size. Shipping weight, about 100 pounds. Price, each.....\$26.00

Big Values in Vibrators—Don't Overlook Them



No. 57H6307 This new type vibrator works on an entirely new principle. Instead of being operated by a motor, this vibrator is operated by magnetism. The magnet and shaft are placed inside the round nickel plated frame in the same way the motor is placed in the ordinary machine. When attached to an alternating current circuit of 110 to 115 volts the shaft carrying the applicator will vibrate back and forth in a straight line. This vibrator comes in a leatherette box 9 inches long, 6 inches wide and $3\frac{3}{4}$ inches deep, with fasteners, handle and set of applicators. This machine is highly recommended to those desiring a good vibrator at a moderate price. Before purchasing any vibrator you should consult your family doctor, to make sure you are purchasing the one best suited to your needs. Shipping weight, about 4 pounds.

Price.....\$8.00

No. 57H6309 This vibrator is larger than No. 57H6307 and operates on the same principle. A new and useful improvement has been added which enables the operator to use either the side motion vibration or, by placing the applicator shaft through a hole in the side of the frame, the applicator will vibrate to and from the frame, which gives a pounding effect when applied. This machine is well made and finished. Furnished complete with set of applicators. Packed in leatherette box $10\frac{1}{2}$ inches long, 7 inches wide, $4\frac{1}{2}$ inches deep. Shipping weight, about 6 pounds.

Price.....\$10.75



Improved Type Electric Radiator

This new improved type electric radiator is a distinct departure from the reflector and incandescent lamp type of radiators. This new type is much more efficient and economical, besides being an elegant fixture in any home.

The Improved Type Electric Radiator looks and works very much like the familiar hot water radiator. There is nothing odd or objectionable in appearance about this radiator. It has no freakish lines to attract attention, but is a businesslike item of desirable appearance.

Uses of the Radiator

The entire house may be equipped with these radiators if desired, but their most common use is as an auxiliary heating unit for the bathroom, bedroom, porch or other rooms in which there is desired more heat than the usual heating system affords. Convenient in the Spring and Fall when regular heat is not available.

How to Connect the Radiator

The only connection necessary for operating the radiator is simply attaching the plug to an electric light socket. In a short time the radiator becomes hot and the room warm.

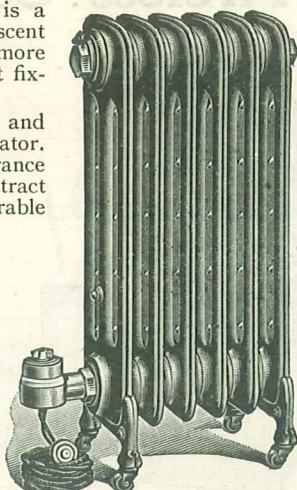
How They Work

The essential feature of their construction lies in the fact that the heating element is placed in the hollow base of the radiator and is immersed in a non-oxidizing fluid with which the interior of the radiator is almost filled.

When the radiator is connected to an electric light socket, the heating element gets very hot. This heat passes into the surrounding fluid, which, as it gets hot, rises toward the top of the radiator and thus a circulation is maintained and the fluid in the radiator constantly circulates up from the heating element and then down on the side of the radiator section, back to the element, then up again, etc. This is practically a duplicate of the operation of the familiar hot water system for heating dwellings. The heat is conveyed to the radiator surface by means of the fluid in the radiator and passed off into the room from the outside surface of the radiator.

Safe and Convenient

As the heating element is entirely enclosed in this radiator, the fire hazard is removed. The radiator may be moved around from



room to room on the casters provided. This feature alone is worth careful consideration, as it provides a means for easily cleaning under and behind the radiator.

Cost of Operation

The cost of operating the radiator varies according to the rate for current for heating. Most central stations have a special rate for current used for heating. In order to estimate the cost of operating any size of this radiator find out from your central station the rate for this current and also if your house will require any extra wiring in order to use the radiator.

No. 57H5241 Radiator consumes about as much current as an ordinary 6-pound electric iron, 500 watts. The larger sizes use a little more current, but are not expensive to operate. The two large size radiators are equipped with three changes of heat by means of a three heat switch which gives low, medium and high heat.

Construction

These radiators are made of pressed metal, finished in gilt and supplied with swivel roller bearing casters, 8-foot cord and plug. They are made to operate on circuits of 100 to 115 volts, alternating or direct current.

Automobile Radiator

This small model was brought out to meet the demand for an efficient electric automobile heater. Electric pleasure cars are cold in Winter, even though they are entirely closed.

This little radiator is placed on the floor of the car, requiring little space and using about 5 per cent of the current discharge of the average electric pleasure car battery. As the electric vehicle requires frequent charging of its batteries, this additional load adds only a small amount to the cost of operating. The radiator is made up of two sections, complete with cord and plug. Please state model and make of car, when ordering.

No.	Nominal Rating (in Watts)	Size in Square Feet of Radiation Surface	No. of Sections	Length Over All, Inches	Width, Inches	Height and Columns	No. of Heat Changes Provided	Approximate Shipping Weight, Pounds	Price
*57H5240 1/3	330	3.0	2	6	7 3/8	15"-2	1	25	\$15.00
57H5241	500	8.8	4	8	7 3/8	23"-2	1	50	19.95
57H5242	750	15	6	12	7 3/8	26"-2	3	65	27.50
57H5243 1/3	1000	20	8	16	7 3/8	26"-2	3	75	32.00

*80 volts, for automobile only.

Improved Electric Water Heater

The Improved Electric Water Heater works on the same principle as the Improved Electric Radiators. In dwellings in which the standard 30-gallon hot water tank is used, you can apply an Improved Heater by inserting it in the boiler through the standard opening in the top. The element is then connected to the electric circuit and you may have plenty of hot water at any time, on a few minutes' notice.

The Improved Electric Water Heater appears like a long rod, reaching almost to the bottom of the tank. In it is contained the heating element and the same insulating non-oxidizing fluid as is used in the Improved Electric Radiator. The surface of this rod, which is about 1 1/4 inches in diameter, becomes very hot, and when it is immersed in the water of the tank raises that water to the heat required of hot water for household purposes.

As with other heating devices, central stations in most communities make a special rate on this heater. It is frequently possible for the householder to enjoy a flat rate of so much a month for all the hot water he needs.

This is far more convenient than the use of coal or gas, requires little attention, is cleaner and has nothing to get out of order.

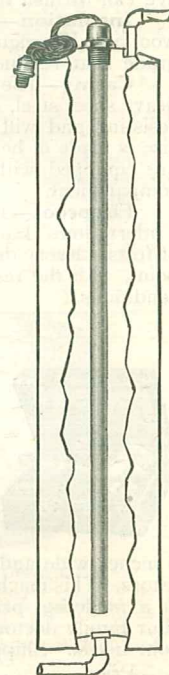
With current at 4 cents per kilowatt hour, 30 gallons of water could be raised from the temperature of the room to about 150 degrees Fahrenheit at a cost of 22 cents. The notable point in favor of this heater is that it need be used only when hot water is wanted.

An insulating cover for a standard 30-gallon tank is furnished with each heater. This heater comes in two sizes, as follows. Shipping weight, about 20 pounds.

Operates on 110 to 115-volt direct or alternating current.

No. 57H5247 Improved Electric Water Heater, 500 watts. Price.....\$14.95

No. 57H5248 Improved Electric Water Heater, 750 watts. Price.....17.50



Modern Electrical Appliances

For Professional and Home Use.

Medical Batteries, Vibrators and Violet Ray Outfits are in extensive use for the relief of certain diseases and disorders. Their advocates are enthusiastic over the possibilities for relief resulting from the proper use of these machines.

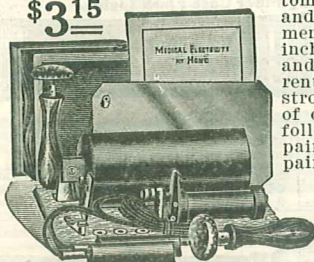
We advise consultation with a physician before placing an order, so that the purchaser may be sure to order the particular machine best suited to the purpose for which it is to be used. We guarantee these appliances to be high grade in every respect.

Single Cell Medical Battery.

No. 57H6300 Polished oak case, 8 1/4 x 5 1/4 x 4 1/4 in., opening top and bottom. Lower compartment for dry cell and battery mechanism, upper compartment for accessories. Faradic coil, 1 inch in diameter with locking device and spring vibrator. Intensity of current regulated, from very mild to very strong, by withdrawing shield from core of coil. Metal parts nickel plated. The following accessories are included: One pair conducting cords with tips, one pair insulating wooden handles, one pair nickel plated metal handles, one pair sponge electrodes, one nickel plated foot plate. Shipping weight, 8 pounds. Price, complete with accessories and one dry cell, ready for use.... **\$3.15**

For extra batteries see Nos. 57H6085 and 57H6092, page 18.

\$3.15

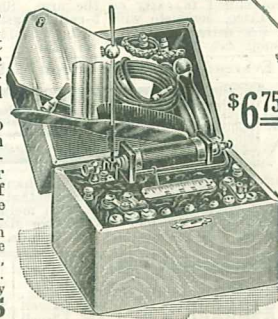


Double Cell Medical Battery.

No. 57H6305 Polished oak case, 9 1/2 x 7 1/2 x 6 3/8 in., with compartment in cover for accessories and compartment in base for the two dry cells. Faradic coil, 1 1/2 inches in diameter, with locknut, spring vibrator and adjustable ball attachment for slow vibration. Intensity of current regulated from very mild to very strong, by withdrawing shield from core of coil. Three-point switch regulating strength of current. Pole changer for changing the polarity or direction of the current. Metal parts all nickel plated. The following accessories are included: One pair conducting cords with tips, one pair insulating wooden handles, one pair nickel plated metal handles, one pair sponge electrodes, one nickel plated foot plate, one electric hair brush. Shpg. wt., about 13 lbs. Price, complete with accessories and two dry cells, ready for use.... **\$6.75**

For extra batteries see Nos. 57H6085 and 57H6092, page 18.

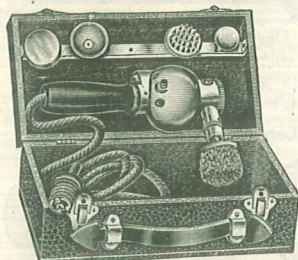
\$6.75



Our Popular Priced Home Vibrator.

No. 57H6311 Packed in a satin lined imitation leather case; motor mounted in cast aluminum frame, polished. The motor speed can be controlled by turning thumb-screws; all internal parts of hardened steel. Furnished with five applicators; one metal disc, one soft sponge, one rubber cup, one metal ball, one scalp disc. Operates on 100 to 120-volt current. Especially recommended for home use. This vibrator will be found the ideal size for use in the home. Because of this feature as well as its simplicity of operation, it will prove an extremely satisfactory low priced appliance. Shipping weight, about 4 1/2 lbs. **\$9.50**

Price, complete, **\$9.50**
No. 57H6322 Lovolt Vibrator. Same as No. 57H6311 but constructed to operate on 32-volt private lighting plant current. Price, complete, **\$9.50**



Triple Cell Medical Battery.

No. 57H6310 Polished oak case, 10 1/2 x 9 x 7 1/4 in., with compartment in top for accessories and drawer in base for the three dry cells. Faradic coil, 1 1/2 inches in diameter with locknut and long spring vibrator. Intensity of current smoothly regulated, from very mild to very strong, by improved circular carbon rheostat. Five-point switch, by means of which one cell, two cells or three cells may be used at a time for regulating strength of current. Wheel rheotome for interrupted current, adjustable for very slow or rapid interruptions. Pole-changer for changing polarity or direction of current. Metal parts all nickel plated. The following accessories are included: One pair conducting cords with tips, one pair insulating wooden handles, one pair nickel plated metal handles, one pair sponge electrodes, one nickel plated foot plate, one electric hair brush. Shipping weight, about 22 pounds.

Price, complete with accessories and three dry cells, ready for use.... **\$9.85**

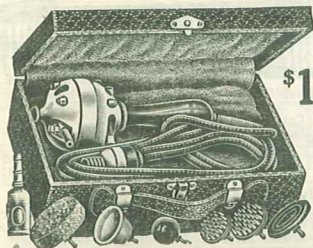
For extra batteries see Nos. 57H6085 and 57H6092, page 18.



Type A Vibrator for 104 to 115-Volt Current.

No. 57H6312 Packed in a satin lined imitation leather covered carrying case, and includes a long double conductor cord with plug for attaching to any electric light socket. The outfit consists of the vibrator and six different applicators; one hard rubber disc; one soft sponge rubber disc; one rubber cup; one hard ball; one small scalp applicator and one large scalp applicator. The vibrator is made with a very quiet running and powerful motor, finished in polished aluminum, being very strong and durable. Shipping weight, about 5 lbs. **\$12.95**

Price, complete, in imitation leather covered case, with electric conductor cord and six applicators.... **\$12.95**
Unless otherwise specified we will send this vibrator with motor suited for currents of from 104 to 115 volts.



Cannot Be Used With Batteries.

Type C Vibrator for 104 to 115-Volt Current.

No. 57H6314 This is a larger and heavier vibrator than the Type A and is suited to the severe requirements of the professional operator. While intended particularly for use in hospitals, massage parlors, Turkish bath establishments and barber shops, we find that many of our customers also prefer this model for home use. Every detail of both mechanical and electrical construction has been carefully supervised. Hand-some imitation leather covered satin lined case and comes complete with six applicators and electric conductor cord. Shipping weight, 6 pounds. **\$16.95**

Price, complete, in imitation leather covered case, with electric conductor cord and six applicators.... **\$16.95**

Sent with 104 to 115-volt motor, unless otherwise requested.



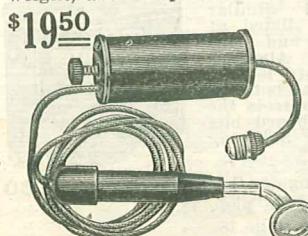
\$16.95

Cannot Be Used With Batteries.

No. 1 High Frequency Violet Ray Set.

No. 57H6318 Simply apply the machine to any electric light socket of 104 to 110-volt direct or 60-cycle alternating current. It gives the well known high frequency Violet Ray treatment without pain or shock; strength of current may be regulated by turning the generator knob. Outfit consists of one hard rubber generator complete with a durable cord, large hard rubber handle for holding the electrode, and one surface electrode. Complete with instructions. Shipping weight, about 4 pounds. **\$19.50**

Price, complete **\$19.50**



Electric Hair Dryer.



\$11.00

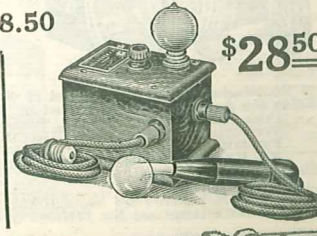
No. 57H6316 Packed in imitation leather case. Made of aluminum, black enameled, nickel plated trimmings. Hot and cold air may be obtained by turning switch without stopping motor; gives delightful breeze, operates on 100 to 120-volt current. Shipping weight, about 5 1/2 pounds. **\$11.00**

Price, complete.... **\$11.00**

No. 2 High Frequency Violet Ray Set.

No. 57H6320 This set operates the same as our No. 1 Violet Ray Set, but is more complete. The generator is encased in a quarter sawed oak case with lamp and regulator a knob mounted on the top. Furnished with cord and plug connections, hard rubber handle, electrode and instructions. The cost of operating the Violet Ray Generator is very small, as the current taken into the machine is transformed into a high frequency current of very bright violet rays. The surface electrode furnished is used for treating the face and entire surface of the body. Shipping weight, about 6 1/2 pounds. **\$28.50**

Price, complete.... **\$28.50**



\$28.50

Electric EVEREADY Flash Lights

You will find many uses for a flash light. They have all the usefulness of the ordinary candle or lantern, with extra advantages all their own. Clean, convenient, economical, safe; no fire, no oil, no wicks, no danger. EVEREADY FLASH LIGHTS are widely advertised at prices higher than we ask. The genuine MAZDA lamps furnished with our flash lights give a bright light and use much less current than carbon lights. The well known EVEREADY TUNGSTEN BATTERIES are high grade, and satisfactory service is guaranteed. Extra batteries and lamps will be found on page 18. We suggest that you order one extra battery with your flash light.

Tungsten Search Lantern.

No. 57H6675

Ideal for watchmen, yacht, motor boat and general household use. Strong, nickel plated all over, 5 inches high. Candle power magnified by the 3-inch lens. Large ball, convenient to carry on the arm. Shipping weight, 4 pounds. Price, complete with 5-cell Tungsten battery.....\$4.40 For extra batteries see No. 57H6710 on page 18. For extra lamps see No. 57H6916 on page 18.

Eveready Non-Short Circuit Nickel Plated Flash Light.

Made with strong brass case, heavily nickel plated and polished. Adapted for use around motor cars, motor boats and shops where the hands of the user are likely to be oily or wet. Insulated so that there is no possibility of short circuiting by contact with metal objects. An ideal light to carry in the tool box. Three sizes. Shipping weights, 14 ounces, 1 1/2 pounds and 1 3/4 pounds, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6658	1 1/2	5 1/2	2-cell	\$0.96	57H6791	57H6906
57H6660	1 1/2	6 1/2	2-cell	1.18	57H6790	57H6907
57H6662	1 1/2	9	3-cell	1.38	57H6705	57H6905

Eveready Large Lens Nickel Plated Flash Lights.

Same as above, but larger reflector and lens, 2 1/2 inches in diameter, magnifies the candle power and spreads the light. Two sizes. Shipping weights, 2 pounds and 2 1/2 pounds, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6664	1 1/2	6 1/2	2-cell	\$1.58	57H6790	57H6907
57H6668	1 1/2	9	3-cell	1.87	57H6705	57H6905

Eveready Extra Large Lens Nickel Plated Flash Light.

Same as those listed above, but with extra large reflector and lens, measuring 3 in. in diameter. A fine flash light that will appeal to those who want a large lens light. Two sizes. Shipping weights, 1 1/2 pounds and 2 1/2 pounds, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6654	1 1/2	6 1/2	2-cell	\$2.25	57H6790	57H6907
57H6655	1 1/2	9	3-cell	2.65	57H6705	57H6905

Eveready Flash Light Candle.

No. 57H6612 This battery candle is a desirable addition to any dresser. Very attractive and useful too, making a very desirable gift. Switch in the stem near the base gives control of the light at any time. Highly polished, nickel plated, 1 1/2 inches in diameter, 5 1/2 inches high; base, 4 inches in diameter. Double cell battery. Shipping weight, about 1 1/2 pounds.

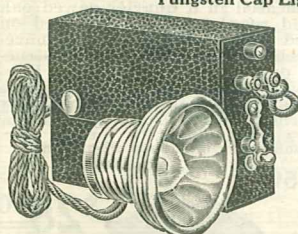
Price, with Tungsten battery.....\$7.76 For extra batteries see No. 57H6791 on page 18. For extra lamps see No. 57H6903 on page 18.

Electric Tungsten Candle.

No. 57H6614 A 20th century candle that reproduces the old fashioned candle stick, which is popular with many people for guest rooms and table decorations. Base is nickel plated and polished. The taper is porcelain with Mazda candle lamp. Candle is 9 1/2 inches high over all, 1 1/2 inches in diameter. Base, 5 inches in diameter. Shipping weight, 1 1/2 pounds.

Price, complete with 3-cell battery.....\$2.80 For extra batteries see No. 57H6753 on page 18. For extra lamps see No. 57H6917 on page 18.

Tungsten Cap Lights.



No. 57H6606 Especially adapted to meet the requirements of hunters, miners, inspectors and all who need a strong, concentrated light, one that will not blow out or cause fire under any circumstances and permits both hands to be free. Consists of a reflector, nicely nickel plated, with lens 2 1/2 inches in diameter. Can be attached to the cap, or elsewhere, by means of the attachment pins. Has 5 feet of flexible connecting cord, and a battery box which holds the five-cell battery, operated by the switch. Shipping weight, about 4 pounds.

Price, complete with five-cell Tungsten battery.....\$4.40 For extra batteries see No. 57H6731 on page 18. For extra lamps see No. 57H6916 on page 18.

No. 57H6607 Same as No. 57H6606, but equipped with a three-cell battery. Shipping weight, about 2 1/2 pounds.

Price, complete.....\$4.00 For extra batteries see No. 57H6735 on page 18. For extra lamps see No. 57H6909 on page 18.

Eveready Fountain Pen Light.



No. 57H6682 Can be carried in the vest pocket. Held securely by the clip, same as an ordinary fountain pen. Metal case with black finish. Clip and push button nickel plated. Combined sliding and push button contact for either continuous light or flashes. Length, 5 1/2 inches; diameter, 5/8 inch. Double cell battery. Shipping weight, 8 ounces.

Price, complete with Tungsten battery..\$7.76 For extra batteries see No. 57H6706 on page 18. For extra lamps see No. 57H6900 on page 18.

Eveready Gas Range Lighter.



No. 57H6638 Why bother with matches or risk burning your hand when you can use one of these handy gas lighters? Simply turn on the gas and press the button. If you need a light for any reason remove the lighter tip and replace with the Mazda bulb, furnished with each lighter, which makes a dandy flash light for occasional use. Lighter has a fiber case with nickel plated trimmings. Case is 1 1/2 inches in diameter; length, over all, 13 inches. Double cell battery. Shipping weight, about 2 pounds.

Price, with Tungsten battery.....\$1.30 For extra batteries see No. 57H6790 on page 18. For extra tips and lamps see Nos. 57H6914 and 57H6907 on page 18.

Eveready Pistol Light. Great Gift for Boys.

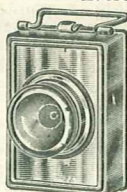


No. 57H6680

Looks just like a real automatic pistol. When the trigger is pressed a bright beam of light shines from the muzzle. Strongly made of brass with gun-metal finish. Height, 3 inches; length, 3 1/2 inches. Double cell battery. Shipping weight, 7 ounces.

Price, with Tungsten battery.....\$1.19 For extra batteries see No. 57H6750 on page 18. For extra lamps see No. 57H6901 on page 18.

Eveready House Lamp.



No. 57H6685 Nickel plated, highly polished case. Depth, 2 1/2 inches, measuring from the front of lens; width, 2 1/2 inches; height, 3 1/2 inches. Triple cell battery. Shipping weight, 1 1/2 pounds. Price, with Tungsten battery...\$1.55

For extra batteries see No. 57H6703 on page 18. For extra lamps see No. 57H6904 on page 18.

Eveready Coat Pocket Light.

No. 57H6628 Metal case, covered with book-binders' black cloth. Nickel plated trimmings. Size, 1x2 1/2x3 1/2 inches. Triple cell battery. Shipping wt., 12 ounces.

Price, with Tungsten battery.....\$7.80 For extra batteries see No. 57H6703 on page 18. For extra lamps see No. 57H6904 on page 18.



Handy Electric Lantern.

No. 57H6676

Convenient anywhere a lantern is needed. Safe around gasolene and explosives of all kinds. Every housewife will appreciate one of these lanterns. Nicely nickel plated and polished all over, 4 1/2 inches high large lens 2 1/2 inches in diameter. Ball is about 5 1/2 inches across. Shipping weight, 2 1/2 pounds. Price, complete with three-cell Tungsten battery...\$2.80 For extra batteries see No. 57H6775 on page 18. For extra lamps see No. 57H6909 on page 18.

Eveready Fiber Case Flash Lights.

Vulcanized fiber case, with nickel plated trimmings. Very popular style. Three sizes. Shipping weights, 14 ounces, 1 1/2 pounds and 1 3/4 pounds, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6640	1 1/2	5 1/2	2-cell	\$0.77	57H6791	57H6906
57H6643	1 1/2	6 1/2	2-cell	.95	57H6790	57H6907
57H6646	1 1/2	9	3-cell	1.10	57H6705	57H6905

Eveready Large Lens Fiber Case Flash Light.

Same as above, but larger reflector and lens, 2 1/2 inches in diameter, increases the candle power and spreads the light. Two sizes. Shipping weights, 1 pound 9 ounces and 1 1/2 pounds, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6650	1 1/2	6 1/2	2-cell	\$1.15	57H6790	57H6907
57H6653	1 1/2	9	3-cell	1.30	57H6705	57H6905

Eveready Large Lens Searchlight.

Throws a powerful light. Black vulcanized fiber nickel plated trimmings. Large lens, 3 inches in diameter. Two sizes. Shipping wt., about 3 lbs. and 5 lbs. respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6656	1 1/2	8 1/2	3-cell	\$2.39	57H6705	57H6905
57H6657	1 1/2	13	5-cell	3.40	57H6715	57H6916

Eveready Flash Light.

Metal case embossed to look like canvas with black enamel finish, nickel plated trimmings. Spring contact. Two sizes. Shpg. wts., 1 1/4 pounds and 1 pound 7 ounces, respectively.

Catalog No.	Diameter, Inches	Length, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6634	1 1/2	6 1/2	2-cell	63c	57H6790	57H6907
57H6635	1 1/2	8 1/2	3-cell	75c	57H6705	57H6905

Eveready Silver Plated Vest Pocket Light.

Embossed case of artistic design. Quadruple silver plated with the popular gray finish. Three sizes. Shipping weights, 5, 6 and 7 ounces, respectively.

Catalog No.	Size, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6615	1 1/2x1 1/2x2 1/2	2-cell	\$0.97	57H6700	57H6900
57H6616	3/4x1 1/2x2 1/2	2-cell	.97	57H6750	57H6901
57H6617	3/4x2x2 1/2	3-cell	1.15	57H6751	57H6902

Eveready Vest Pocket Light.

Highly polished nickel plated case with hinged bottom. Three sizes. Shipping weights, 5, 6 and 7 ounces, respectively.

Catalog No.	Size, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6601	3/4x1 1/2x2 1/2	2-cell	59c	57H6700	57H6900
57H6602	3/4x1 1/2x3	2-cell	59c	57H6750	57H6901
57H6603	3/4x2x3	3-cell	79c	57H6751	57H6902

Coat Lapel Light.

No. 57H6608 Similar to the cap light listed at left, but smaller and does not have a lens. About 3 feet of flexible cord is furnished which connects to the battery, and a switch on the light controls the current. Battery enclosed in a cardboard box of convenient size to carry in pocket. Shipping weight, about 1 pound.

Price, complete with three-cell Tungsten battery.....\$1.60 For extra batteries see No. 57H6752 on page 18. For extra lamps see No. 57H6909 on page 18.





Electric

Miners' Type SHURITE Flash Light.

Non-short circuit black fiber case with nickel plated trimmings. Large reflector and good lens, measuring 2 1/2 inches in diameter. Gives excellent light and spreads it over a large area. Two sizes. Shipping weights, 1 pound 9 ounces and 1 1/2 pounds, respectively.

Catalog No.	Diam. In.	Lgth. In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6568	1 1/2	6 3/4	2-cell	\$0.95	57H6890	57H6907
57H6570	1 1/2	9	3-cell	1.10	57H6805	57H6905

Fiber Case SHURITE Flash Light.



Non-short circuit black fiber case with nickel plated trimmings. Popular style. Three sizes. Shipping weights, 1 pound, 1 pound 5 ounces and 1 1/2 pounds, respectively.

Catalog No.	Diam. In.	Lgth. In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6560	1 1/4	5 1/4	2-cell	60c	57H6891	57H6906
57H6562	1 1/2	6 3/4	2-cell	80c	57H6890	57H6907
57H6564	1 1/2	9	3-cell	90c	57H6805	57H6905

SHURITE

Flash Lights

Large Lens SHURITE

Flash Light.

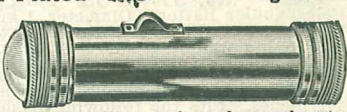
Miners' Type Nickel Plated Tubular Light.

Same as No. 57H6578 below, but made with extra large reflector and lens measuring 2 1/2 inches in diameter, which spreads the light over a greater area. Two sizes. Shipping weights, 2 pounds and 2 1/2 pounds, respectively.

Catalog No.	Diam. In.	Lgth. In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6586	1 1/2	6 3/4	2-cell	\$1.30	57H6890	57H6907
57H6588	1 1/2	9	3-cell	1.55	57H6805	57H6905

Nickel Plated SHURITE Flash Light.

Non-Short Circuit Tubular Light, made with brass case, nickel plated and polished.



A very handsome flash light, much used around motor cars, motor boats and shops where the hands of the user are likely to be oily or wet. Three sizes. Shipping weights, 14 ounces, 1 1/2 pounds and 1 3/4 pounds, respectively.

Catalog No.	Diam. In.	Lgth. In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6576	1 1/4	5 1/4	2-cell	\$0.75	57H6891	57H6906
57H6578	1 1/2	6 3/4	2-cell	.90	57H6890	57H6907
57H6580	1 1/2	9	3-cell	1.05	57H6805	57H6905

High Grade Electric Lanterns, Vehicle Lights, Flash Lights, Attachments and Clocks

Electric Vehicle Light.



Do not risk driving at night without a light. See the road ahead and warn those behind. Outfit consists of steel battery case and high grade lamp, having 3 1/4-inch reflector, 1 1/4 inches deep, and red lens in rear. Black enameled finish, nickel plated trimmings. Switch controls light. Brackets provided for mounting. Case, 7x5x2 1/2 inches. Will hold two No. 6 dry cells. Ten feet of wire furnished.

No. 57H6699 Vehicle Light. Complete, without batteries. Shipping wt., 5 pounds. Price, \$1.30.
No. 57H6678 Vehicle Light. Complete, with two Stand-By dry batteries. Shpg. wt., 9 lbs. Price, \$1.80.
For extra batteries see No. 57H6092, on page 18.
For extra lamps see No. 57H6915, on page 18.

The "Spot Light."



This standard cell flash light is made with a reflector by means of which it throws a narrow, brilliant shaft of light to a great distance. Black japanned metal case with handle and bail. Diameter of case, 2 1/2 inches. Height over all, 8 inches. Diameter of lens, 2 1/2 inches. Shipping weight, 3 pounds.

No. 57H6688 Price, without battery.....65c

No. 57H6689 The "Spot Light" complete, with battery. Shipping wt., 5 pounds. Price.....90c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6910 on page 18.

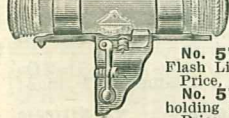
Revolver Flash Light Attachment.



No. 57H6595 Quickly attached to revolver. Slight pressure on lever makes the light. Gives light and gun in one hand. You can shoot straighter at night than in the daytime. Just pull the trigger when the light spots your object. Good device for watchmen and officers of the law.

Price, complete with battery.....\$1.50

Shipping weight, about 1 1/4 pounds. Extra batteries and lamps Nos. 57H6706 and 57H6900 on page 18. Gun not included.



Gun attachment for Tubular Flash Light No. 57H6640.

Price, each.....\$1.00

No. 57H6597 Attachment for holding Pen Light No. 57H6682.

Price.....\$1.00

Flash light not included.

Popular Double Cell Lantern.



Made of steel formed to give great strength. Has both bail and grip handles. Latter fold flush with body in back. Heavy lens gives bullseye effect. Reflector is silver plated and polished. Switch located conveniently in back. Black enameled finish with nickel plated trimmings. 7 1/2 inches high, 5 1/2 inches wide and 4 inches thick. Requires two standard 2 1/2x6-inch dry cells. We list below an attachment to this lantern for testing eggs.

No. 57H6693 Popular Double Cell Lantern, complete, without batteries. Shipping weight, 2 1/2 pounds.

Price.....\$1.22

No. 57H6694 Popular Double Cell Lantern, complete with two dry cells. Shipping weight, 7 pounds.

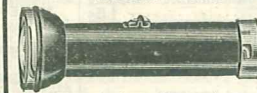
Price.....\$1.72

For extra batteries see No. 57H6092, on page 18.

For extra lamps see No. 57H6915, on page 18.

No. 57H6698 Black Enameled Attachment to use with Lantern No. 57H6693 for testing eggs. A very convenient device. We have sold hundreds. Two eggs may be tested at one time. Shipping weight, about 8 ounces. Price.....10c

Metal Case Flash Lights.



Black enameled metal case, non-short circuit flash light, nickel plated trimmings. Well made and gives good light. Diameter, 1 1/2 inches; length over all, 6 inches. Large lens measures 2 inches in diameter. Shipping weight, about 1 1/2 pounds.

No. 57H6667 Price, complete with double cell Shurite battery.....70c

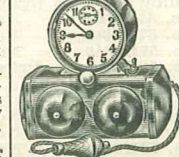
No. 57H6642 Straight tubular shown below. Shipping weight, about 1 pound.

Price, complete with Shurite battery.....47c

For extra batteries and lamps see Nos. 57H6890 and 57H6907 on page 18.



Electric Alarm Clock.



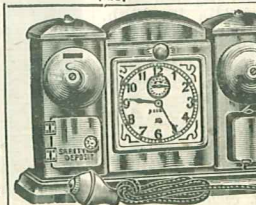
No. 57H6077

Good clock on metal base containing ordinary dry cell battery. Alarm set usual way, rings till switched off. Push button at end of long cord lights small electric lamp in front of clock. Copper oxidized finish. Shipping wt., 6 pounds.

Price, complete with battery.....\$2.90

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.



Electric Eight-Day Alarm.

No. 57H6078 Compartment to right contains battery. Left side is savings bank with combination lock. Push button for light like No. 57H6077. Polished nickel plated case, 12 1/2 inches wide by 7 1/2 in. high. Shipping weight, 11 pounds.

Price, complete with battery.....\$5.00

Extra batteries and lamps same as for No. 57H6077.

Battery Flash Light Attachment.

No. 57H6683 Fits any standard 2 1/2x6-inch dry cell. Exceptionally good device because of band which clamps around battery, taking weight off terminals. Plain finish and plain glass lens. Length over all, 5 1/2 inches; height, 3 1/2 inches; diameter, about 1 1/2 inches. Shipping weight, about 1 lb.

Price, without battery.....28c

No. 57H6684 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.



Flash Light Batteries.

You will find listed below genuine EVEREADY TUNGSTEN batteries. These are high grade batteries, which are widely advertised. We also call your attention to the Shur-lite batteries listed at the bottom of this page. These are our own brand, high grade batteries. Satisfactory service guaranteed. For flash light see pages 858 and 859.



No. 57H6705 Tungsten Three-Cell Tubular Battery. Diameter, 1 3/8 inches; length, 7 inches. Fits the following flash lights:

No. 57H6635 No. 57H6668 No. 57H6655
No. 57H6590 No. 57H6662 No. 57H6653
No. 57H6570 No. 57H6592 No. 57H6646
No. 57H6656 No. 57H6564 No. 57H6588
No. 57H6580

Shipping weight, 12 oz. Price...30c

No. 57H6706 Tungsten Double Cell Tubular Battery. Diameter, 1 1/8 inch; length, 4 inches. Fits flash lights:

No. 57H6682 No. 57H6595
Shipping weight, 3 oz. Price...20c

No. 57H6753 Tungsten Three-Cell Tubular Battery. Diameter, 1 inch; length, 7 inches. Fits Flash Light Candle No. 57H6614. Shipping weight, 9 ounces. Price...34c

No. 57H6790 Tungsten Double Cell Tubular Battery. Diameter, 1 1/8 inches; length, 4 3/4 inches. Fits the following flash lights:

No. 57H6634 No. 57H6664 No. 57H6578
No. 57H6638 No. 57H6643 No. 57H6650
No. 57H6667 No. 57H6568 No. 57H6660
No. 57H6562 No. 57H6654 No. 57H6642

Shipping weight, 8 ounces. Price...23c

No. 57H6791 Tungsten Double Cell Tubular Battery. Diameter, 1 inch; length, 3 3/4 inches. Fits the following flash lights:

No. 57H6658 No. 57H6612 No. 57H6640 No. 57H6560
No. 57H6576

Shipping weight, 4 ounces. Price...23c

No. 57H6700 Tungsten Double Cell Battery. 1/2 inch thick, 1 1/8 inches wide, 1 1/8 inches high. Fits the following flash lights:

No. 57H6601 No. 57H6615
Shipping wt., 2 oz. Price...23c

No. 57H6703 Tungsten Triple Cell Battery. 3/4 inch thick, 2 1/8 inches wide, 2 1/8 inches high. Fits the following flash lights:

No. 57H6685 No. 57H6629 No. 57H6628 No. 57H6697
Shipping weight, 6 ounces. Price...27c

No. 57H6715 Tungsten Five-Cell Battery. Diameter, 1 3/8 inches; length, 11 1/4 inches. Fits Flash Light No. 57H6657.

Shipping weight, 1 1/4 pounds. Price...60c

No. 57H6731 Tungsten Five-Cell Battery. 1 1/2 inches thick, 3 inches high, 6 1/2 inches wide. To be used with cap light No. 57H6606.

Shipping weight, 1 1/2 pounds. Price...65c

No. 57H6734 Tungsten Triple Cell Battery. 1 1/8 inches thick, 4 inches wide, 3 inches high. Fits the following flash light: No. 57H6696.

Shipping weight, 1 pound. Price...34c

No. 57H6735 Tungsten Triple Cell Battery. 1 1/8 inches thick, 4 inches wide, 3 inches high, with terminals for connection with cap light No. 57H6607.

Shipping weight, 1 pound. Price...40c

No. 57H6750 Tungsten Double Cell Battery. 3/4 inch thick, 1 1/8 inch wide, 2 1/4 inches high. Fits the following flash lights:

No. 57H6680 No. 57H6616 No. 57H6602

Shipping weight, 3 ounces. Price...23c

No. 57H6751 Tungsten Triple Cell Battery. 1 1/8 inch thick, 2 inches wide, 2 1/4 inches high. Fits the following flash lights:

No. 57H6617 No. 57H6603
Shipping weight, 4 ounces. Price...27c

No. 57H6792 Tungsten Double Cell Battery. 1/2 inch thick, 1 1/8 inches wide, 2 1/8 inches high. Fits the following flash lights:

No. 57H6634 No. 57H6625
Shipping weight, 4 oz. Price...23c

No. 57H6710 Tungsten Five-Cell Battery. Diameter, 3 3/8 inches; height, 3 inches. Fits Tungsten Search Lantern No. 57H6675.

Shipping weight, 1 1/4 lbs. Price...65c

No. 57H6719 Tungsten Five-Cell Battery. 2 1/4 inches thick, 3 inches high, 4 inches wide. Fits Lantern No. 57H6679.

Shipping weight, 2 pounds. Price...65c

No. 57H6752 Three-Cell Tungsten Battery. 1 3/8 in. thick, 4 in. wide, 3 3/8 in. high. Fits the following flash light: No. 57H6608.

Shipping weight, 1 lb. 1 oz. Price...40c

No. 57H6775 Tungsten Three-Cell Battery. 2 1/8 inches thick, 3 inches high, 2 3/4 inches wide. Fits Flash Light No. 57H6676.

Shipping weight, about 2 lbs. Price...40c

No. 57H6092 Stand-By Dry Battery. Fits the following lanterns, flash lights, battery attachments and clocks:

No. 57H6693 No. 57H6678 No. 57H6683 No. 57H6694
No. 57H6688 No. 57H6684 No. 57H6699 No. 57H6689
No. 57H6690 No. 57H6677 No. 57H6678

Shipping weight, 2 1/2 pounds. Price, each...26c

BATTERIES AND LAMPS

Flash Light Lamps.

We offer genuine MAZDA Flash Light Lamps, which are very high grade. Mazda lamps give a white light and consume far less current than a carbon lamp, giving a greater amount of light from one battery. If your flash light does not work, do not lay all the blame on the battery, as the lamp may be broken or burned out. The actual candle power of the lamp, as stated below, is greatly magnified by the reflector and lens when used in the flash light. It is advisable to have an extra lamp available.



No. 57H6900 Mazda Lamp. 2.5 volts, 3/4-candle power. Fits the following flash lights:

No. 57H6801 No. 57H6615
No. 57H6882 No. 57H6595
Shipping weight, 2 ounces. Price...10c

No. 57H6901 Mazda Lamp. 2.5 volts, 1-candle power. Fits the following flash lights:

No. 57H6602 No. 57H6680 No. 57H6616
Shipping weight, 2 ounces. Price...10c

No. 57H6902 Mazda Lamp. 3.8 volts, 1 1/2-candle power. Fits the following flash lights:

No. 57H6603 No. 57H6617
Shipping weight, 2 ounces. Price...10c

No. 57H6903 Mazda Lamp. 2.7 volts, 1-candle power. Fits the following flash lights:

No. 57H6667 No. 57H6625
No. 57H6624 No. 57H6612
Shipping weight, 2 ounces. Price...10c

No. 57H6904 Mazda Lamp. 3.8 volts, 1 1/2-candle power. Fits the following flash lights:

No. 57H6628 No. 57H6627
No. 57H6685 No. 57H6629
Shipping weight, 2 ounces. Price...10c

No. 57H6905 Mazda Lamp. 3.8 volts, 1 1/2-candle power. Fits the following flash lights:

No. 57H6635 No. 57H6668 No. 57H6655
No. 57H6590 No. 57H6662 No. 57H6653
No. 57H6570 No. 57H6592 No. 57H6646
No. 57H6656 No. 57H6564 No. 57H6588
No. 57H6580

Shipping weight, 2 ounces. Price...10c

No. 57H6906 Mazda Lamp. 2.7 volts, 1-candle power. Fits the following flash lights:

No. 57H6658 No. 57H6590
No. 57H6640 No. 57H6576
Shipping weight, 2 ounces. Price...10c

No. 57H6907 Mazda Lamp. 2.9 volts, 1-candle power. Fits the following flash lights:

No. 57H6634 No. 57H6643 No. 57H6650
No. 57H6662 No. 57H6664 No. 57H6654
No. 57H6686 No. 57H6660 No. 57H6638
No. 57H6658 No. 57H6578 No. 57H6642
No. 57H6666

Shipping weight, 2 ounces. Price...10c

No. 57H6909 Mazda Lamp. 4 volts, 1 1/2-candle power. Fits the following flash lights and lantern:

No. 57H6607 No. 57H6676
No. 57H6608 No. 57H6696
Shipping weight, 2 ounces. Price...10c



No. 57H6910 Mazda Lamp. 1 1/2 volts, 3/4-candle power. Fits the following flash lights and clocks:

No. 57H6688 No. 57H6078
No. 57H6691 No. 57H6689
No. 57H6077 No. 57H6692
Shipping wt., 2 oz. Price...12c

No. 57H6911 Mazda Lamp. 1 1/2 volts, 3/4-candle power. Fits the following flash lights:

No. 57H6683 No. 57H6684
No. 57H6690 No. 57H6077
No. 57H6078

Shipping weight, 2 ounces. Price...15c

No. 57H6912 Mazda Lamp. 6 volts. Will fit Lantern No. 57H6905. Shipping weight, 2 ounces. Price...25c

No. 57H6913 Mazda Lamp. 1/2 volt. Will fit No. 57H6684 battery attachment. Shipping weight, 2 ounces. Price...15c

No. 57H6914 Gas Lighter Tip for No. 57H6638 range lighter. Shipping weight, 2 ounces. Price...16c

No. 57H6915 Mazda Lamp. 3 volts. For lantern and vehicle light:

No. 57H6693 No. 57H6699
No. 57H6694 No. 57H6678
Shipping weight, 3 ounces. Price...15c

No. 57H6916 Mazda Lamp. 6.2 volts. Fits lantern and flash lights:

No. 57H6679 No. 57H6675
No. 57H6686 No. 57H6657
Shipping weight, 3 ounces. Price...10c

No. 57H6917 Mazda Lamp. 7 volts, 1 1/2-candle power. Fits Tungsten Candle No. 57H6614. Shipping wt., 3 oz. Price...35c



SHURLITE FLASH LIGHT BATTERIES.

Our Own Brand of High Grade Batteries.

No. 57H6805 Shur-lite Triple Cell Battery. Diameter, 1 1/8 inches; length, 7 inches. Fits the following flash lights:

No. 57H6570 No. 57H6592 No. 57H6635 No. 57H6668 No. 57H6564
No. 57H6588 No. 57H6662 No. 57H6653 No. 57H6590 No. 57H6580
No. 57H6646 No. 57H6656 No. 57H6655

Shipping weight, 12 ounces. Price...24c

No. 57H6890 Shur-lite Double Cell Tubular Battery. Diameter, 1 3/8 inches; length, 4 3/4 inches. Fits the following flash lights:

No. 57H6568 No. 57H6578 No. 57H6634 No. 57H6643 No. 57H6562
No. 57H6642 No. 57H6660 No. 57H6664 No. 57H6586 No. 57H6667
No. 57H6654 No. 57H6638 No. 57H6650

Shipping weight, 8 ounces. Price...20c

No. 57H6891 Shur-lite Double Cell Tubular Battery. Diameter, 1 inch; length, 3 3/4 inches. Fits the following flash lights:

No. 57H6560 No. 57H6658 No. 57H6576 No. 57H6640 No. 57H6612
Shipping weight, 4 ounces. Price...20c

Standard Dry Cells, Multiple, Wet and Gravity Batteries.

Red Label Dry Battery.

Our Red Label Dry Battery is suitable for telephone use, door bell, annunciators, burglar alarms, medical batteries, small motors or other similar work. It is made with high internal resistance and low amperage, averaging from 10 to 13 amperes. Owing to its high internal resistance it has unusual lasting qualities. Size, 2 1/2 inches diameter by 6 inches high.

No. 57H6085

Price, each....(Shipping wt., 2 1/2 lbs.)....\$ 0.24
Per dozen....(Shipping wt., 30 lbs.).....2.70
Per barrel (125 batteries). (Shpg. wt., 265 lbs.) 28.50



Stand-By Dry Battery.

A battery of medium internal resistance. Suitable for all work to which the Red Label Dry Battery is adapted and may also be used for ignition purposes, although for this work it is not equal to the Stand-By "Special" described below. The average of the Stand-By battery averages from 16 to 20 amperes. Size, 2 1/2 inches in diameter, 6 inches high.

No. 57H6092

Price, each....(Shipping wt., 2 1/2 lbs.)....\$ 0.26
Per barrel (125 batteries). (Shpg. wt., 300 lbs.) 31.00

Stand-By "Special" Dry Batteries.

The Stand-By "Special" is a dry battery of low internal resistance and is designed especially for ignition work. This battery gives an unusually heavy discharge and a correspondingly hotter and faster spark. It is suitable for use with stationary gasoline engines, automobiles and launches. It may also be used for operating toy motors, lighting miniature incandescent lamps, etc. The Stand-By "Special" is without question one of the very best ignition batteries on the market. Each cell is guaranteed to test from 20 to 25 amperes.

No. 57H6095 Size, In. Shipping Price, Each
No. 57H6097 2 1/2 x 6 2 1/2 28c
3 1/2 x 8 4 1/2 71c

Special Prices in Barrel Lots.
Quantity in Shipping Price, per Barrel
No. 57H6095 Size, In. Barrel Wt., Lbs. \$33.00
No. 57H6097 2 1/2 x 6 125 300
3 1/2 x 8 50 315 34.00



Stand-By Multiple Batteries.

For Automobile or Stationary Engine Ignition.

The Stand-By Multiple Batteries consist of a number of 2 1/2 x 6-inch Stand-By "Special" cells connected in series and multiple. The cells, all connected up, are placed in a wooden case, which is then completely filled with a paraffin-like wax, thus hermetically sealing the batteries, which greatly prolongs their life. We furnish these Stand-By Multiple Batteries in two styles, either of which is suitable for either automobiles or stationary engines. One Stand-By Multiple Battery will outlast from two to three ordinary sets of batteries connected in series.
No. 57H6087 Stand-By Multiple Battery, consisting of ten cells, connected five in series, two multiples. This battery is suitable for all ignition systems using standard coils and timers, or using five or six cells to a set. Dimensions over all: 6 1/2 inches wide, 14 1/2 inches long, 9 1/2 inches high. Net weight, 27 pounds. Price...\$4.95
No. 57H6089 Stand-By Multiple Battery, consisting of fifteen cells, connected five in series, three multiples. Suitable for any ignition system now using five cells in series. Dimensions over all: 8 1/2 inches wide, 14 1/2 inches long, 9 1/2 inches high. Net weight, 42 pounds. Price...\$5.95

Gravity Battery.

The Gravity Battery is a closed circuit battery used almost entirely for telegraph work. The 5x7 battery requires 1 1/2 pounds blue vitriol for a charge, the 6x8 battery requires 3 pounds. Full directions for charging are given in the Manual of Telegraphy, sent with each telegraph instrument.

No. 57H6060 Gravity Battery. Size, 5x7 inches, consisting of jar, copper and zinc. Shipping weight, 6 pounds. Price, without blue vitriol...\$1.05

No. 57H6066 Gravity Battery. Size, 6x8 inches, consisting of jar, copper and zinc. Shipping weight, 9 1/2 pounds. Price, without blue vitriol...\$1.30

NOTE—Blue Vitriol is not furnished with these batteries. It is always sold extra. See statement above regarding quantity of blue vitriol required.

No. 57H6062 Battery Jar, glass, 5x7 inches. Shipping wt., 4 pounds. Price...22c

No. 57H6063 Battery Jar, glass, 6x8 inches. Shipping wt., 6 1/2 pounds. Price...22c

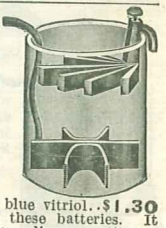
No. 57H6064 Zinc, for 5x7 battery. Shipping weight, 2 1/2 pounds. Price...78c

No. 57H6065 Zinc, for 6x8 battery. Shipping weight, 4 1/2 pounds. Price...\$1.10

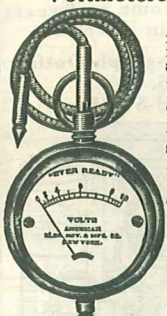
No. 57H6066 Copper, for 5x7 battery. Shipping weight, 3 ounces. Price...13c

No. 57H6067 Copper, for 6x8 battery. Shipping weight, 4 ounces. Price...15c

No. 57H6068 Blue Vitriol. Price subject to market changes. Shipping weight of 1 pound, 1 1/2 pounds. (Not mailable.) Price, per pound...20c



Voltmeters and Ammeters.



Every battery owner should use our genuine Eveready instruments which are carefully calibrated, dead beat and very accurate. As they are no larger than an ordinary watch, they can be carried in the vest pocket, and are very necessary in testing all batteries except storage cells.

No. 57H6101 Eveready Voltmeter. Reads, 0 to 10 volts. Shipping weight, 7 ounces. Price,70c
No. 57H6102 Eveready Ammeter. Reads, 0 to 35 amperes. Shipping weight, 7 ounces. Price,65c
No. 57H6103 Eveready Volt-Ammeter, two scales, registering either voltage or amperage. Reads, 0 to 10 volts and 0 to 35 amperes. Shpg. wt., 7 oz. Price,85c

Miniature Electric Lamp Outfit, \$1.05.



No. 57H6730 An interesting toy. Also useful for lighting dark closets, etc. Consists of three cells of Red Label dry battery, a 1 1/2-candle power miniature Mazda tungsten electric lamp, a receptacle, switch, and 30 feet of insulated wire. Shipping weight, 7 1/2 lbs. Price,\$1.05



Push Buttons.

No. 57H6010 Wood Push Buttons. High grade springs, porcelain center. Shipping wt., 3 ounces. Price,9c
No. 57H6011 Brass Push Buttons, stamped, plain design. Price, each,10c
No. 57H6012 Solid Cup Stamped Brass Buttons. Price, each,15c
No. 57H6013 Anti-Wood Push Buttons. A metal push button, cheaper than wood. Very neat and serviceable. Shipping weight, 3 ounces. Price, each,7c
Per dozen,75c



Wood Base Switches.

For use on telephones, closed circuit bell systems, burglar alarms and battery circuits in general. Hardwood base with rubbed oil finish. Shipping weight, 3 ounces. Price, 1-point,8c
No. 57H6035 Price, 2-point,9c
No. 57H6036 Price, 3-point,9c
No. 57H6038 Price, 4-point,11c



Powerful Electro Magnet.

No. 57H6200 Operates by batteries, providing a practical demonstration of the principles of magnetism. With one good cell of dry battery this magnet has a lifting power of 2 pounds; with two cells it will lift about 5 pounds, and with four cells, if carefully handled, it will lift over 10 pounds. Shipping weight, 1 pound. Price, with two 3-foot conducting cords, but without batteries,\$1.50



Our Special Wet Battery.

No. 57H6050 Our Special Wet Battery gives excellent service for telephones, door bells, etc. This is a sal ammoniac cell, easily and cheaply recharged when exhausted. It consists of a glass jar, a large circular carbon electrode, stick zinc electrode and one charge of sal ammoniac. Shipping wt., 4 lbs. Price, complete,40c
No. 57H6051 Rectangular Stick Zinc, 4x3x6 1/2 inches. Price, 3 zincs (shipping wt., about 3 1/2 lb.),35c
Price, per dozen (shipping weight, about 3 pounds),\$1.20
No. 57H6053 Carbon for our Special Wet Battery. Shipping weight, about 1 1/2 pounds. Price,20c
No. 57H6054 Sal Ammoniac. Price, per pound (shpg. wt., abt. 1 1/2 lbs.),20c
No. 57H6055 Sal Ammoniac. Price, per package, sufficient for one charge (shipping wt., about 6 oz.),10c




Make and Break Coil.

No. 57H6518 Suitable for use with any engine of make and break ignition. Extensive tests proved this coil to be the most efficient of any coil we tested. Mounted in a strong steel case, 2 1/2x2 1/2x6 inches. Convenient size, it takes up approximately the same space as a dry battery and is easily inserted in the battery box. Shipping weight, 3 pounds. Price,50c
No. 57H6519 Make and Break Coil, same as above, but equipped with switch for making and breaking the circuit. Price,60c

Bells, Buzzers, Transformers, Ignition Material and Miscellaneous Electrical Supplies.

Miniature Mazda Electric Lamps.

Mazda Lamps give much greater candle power than the old style carbon filament lamps and greatly increase the life of the battery, as they draw less current. These prices do not include receptacles. Shipping weight, 3 ounces.

	Catalog No.	Volts	Am- peres	Ca'dl Dry Cells	Price, Number of
	57H6115	4	.35	1 1/2	3 12c
	57H6116	6	.35	2	3 12c
	57H6117	8	.30	2	6 20c
	57H6118	6	.85	4	5 20c
	57H6119	10	.60	4	7 23c
No. 57H6120		Round Miniature Lamp			
Receptacle. Will fit any lamp. Shipping weight, 2 ounces. Price, .....7c					
No. 57H6122		Miniature Weatherproof			
Pendant Sockets. Will fit any miniature lamp. Shpg. wt., 2 oz. Price, .....10c					

Quick Action Dry Battery Connector.
No. 57H6105 Made from one piece of soft copper covered with insulating tape. An excellent connector. Shipping weight, 4 oz. Per package of ten,12c

Famous Bulldog Dry Battery Connectors.

One of the best battery connectors. Snapped on in a second and easily removed, prevents all ignition troubles caused by loose connections.
No. 57H6106 Shipping wt., 2 oz. Price, each,3c
No. 57H6107 Shpg. wt., 5 oz. Price, package of ten,25c

Magnet Wire, B. & S. Gauge.
Belden Double Cotton Covered Magnet Wire. One piece only on a spool. Insulation and wire are uniform. State size and weight spool wanted.

Size	1-Oz. Spool	2-Oz. Spool	4-Oz. Spool	8-Oz. Spool	1-Lb. Spool
18					\$0.78
20					.84
22					.89
24					.99
26					1.11
28					1.44
30					1.55
32					2.76
34					
36					
20	20c	32c	40c	.67	1.11
22	22c	35c	50c	.87	1.44
24	24c	37c	50c	.93	1.55
26	26c	50c	85c	1.55	2.76

Belden enameled magnet wire. One piece only on a spool. State size and weight spool wanted.

Size	2-Oz. Spool	4-Oz. Spool	8-Oz. Spool	1-Lb. Spool
16				\$0.46
18				.48
20				.50
22				.53
24				.53
26				.55
28				.55
30				.55
32				.55
34				.55
36				.55
20	24c	33c		.95
22	26c	33c		1.00
24	29c	40c		1.08
26	31c	44c		1.22
28	34c	48c		1.28
30	36c	54c		1.55
32	42c	65c		2.00

NOTE—Above prices include the spool and cost of spooling. The wire is furnished only on size spools given.

Battery Switches.

Recommended for use with stationary, portable and marine gasoline engines, telephone, telegraph, bell work, etc. Made with brass contacts and plain brass handle. Shpg. wt., 3 oz.
No. 57H6041 Single Throw Switch,9c
No. 57H6042 Double Throw Switch, for use with two sets of batteries or one set of batteries and magneto. Price,16c

Permanent Horseshoe Magnets.

Made especially for us by an American manufacturer. Constructed of fine quality steel, and we guarantee them to be more powerful and to retain their magnetism longer than the magnets formerly imported from Europe. We have discontinued the sale of cheap magnets entirely as they do not give satisfaction. State length.
No. 57H6201
Lgth., Shpg. In. Wt. Price
3 3 oz. 12c
4 6 oz. 20c
6 1 1/2 lbs. 35c
No. 57H6202
Lgth., Shpg. In. Wt. Price
8 1 1/2 lbs. \$0.75
10 2 1/2 lbs. 1.25
12 4 1/2 lbs. 1.90

GASOLINE ENGINE MAGNETOS.

Made with two large powerful magnets and completely enclosed armature, affording protection from dirt and moisture. Bearings lubricated with wick oilers with removable caps over oil holes. Equipped with ball bearing governor, which regulates the speed of the magneto, preventing burning out the spark coil or contact points. A uniform spark at all times, insuring full engine efficiency. Once mounted on the engine, they require practically no attention aside from oiling about once in two months and renewal of brushes about once in from twelve to eighteen months. These magnetos are not suitable for use on automobiles.
NOTE—Make and break ignition is also known as "wiper" or "hammerbreak" ignition. If your engine uses a spark plug it is jump ignition. If it does not use a spark plug it is make and break ignition.
No. 57H6551 Friction Drive Magneto for make and break ignition, without coil. Price,\$7.25
No. 57H6552 Friction Drive Magneto, for make and break ignition, with coil mounted in magnets. Price,\$8.25
No. 57H6553 Belt Drive Magneto, for make and break ignition, without coil. Price,\$8.00
No. 57H6554 Belt Drive Magneto, for make and break ignition, with coil mounted in the magnets. Price,\$9.00
Shipping wt. of all make and break magnetos, 18 lbs.

Electric Bell Outfit.

For Door and Call Bell Service. Consists of one Red Label dry battery, one brass push button, one 3-inch bell, 75 feet of annunciator wire and necessary staples. Directions for installing furnished. Weight, 4 1/4 pounds, when packed. No. 57H6022 Price,95c

Buzzer.

No. 57H6007 The same high grade construction as the bells. They make a comparatively low buzzing sound and are used in place of bell where the loud ringing is not desirable. Directions for installing furnished. Shipping wt., 10 oz. Price, each,29c

Electric Door Bells.

No. 57H6000 High grade bell, 3-inch gong, efficient, reliable and long ringing, cover stamped sheet steel, black enameled. Guaranteed to ring clearly through 300 feet of No. 18 annunciator wire, (150 feet from bell to battery) on one cell of battery. To get maximum sound, two batteries should be used. Add one cell for each additional 50 feet of wire. Suitable for use with transformer. Shipping wt., 13 oz. Price, each,30c
No. 57H6002 Same as above, but with 4-inch gong. Not suitable to use with transformer. Shipping weight, 1 pound. Price, each,38c
No. 57H6003 Transformer bell with 4-in. gong. Shipping weight, 1 pound. Price, each,\$1.48
NOTE—These bells cannot be used with telephones. See page 866 for telephone bells.

Large Bells.

Strongly made bells of a fine quality throughout, guaranteed to give satisfactory service. Pressed steel base and cover black enameled. Powerful magnets, quick acting adjustable armature. Not suitable to use with transformer.
No. 57H6015 6-in. 6 lbs. \$3.35
No. 57H6016 8-in. 8 1/2 lbs. 6.15
No. 57H6017 10-in. 11 lbs. 9.95
No. 57H6018 12-in. 14 lbs. 10.60
Large bells, same as above, but made to use with transformer.
No. 57H6019 6-in. 6 lbs. \$7.60
No. 57H6020 8-in. 8 1/2 lbs. 9.45

Bell Ringing Transformer.

No. 57H6005 Electric door bells, buzzers or door openers may be operated by the ordinary city (110-volt alternating) current, thus doing away entirely with the use of batteries. The transformer is simply connected into the lighting circuit, lasts indefinitely, and once installed needs no further attention. Size, 2 1/2 inches wide by 2 inches thick by 6 inches long. Directions for installing furnished. Shipping weight, 2 pounds 13 ounces. Price,\$1.00

Bell Ringing Transformer.

No. 57H6006 Suitable for all the work for which our No. 57H6005 is adapted, and in addition has a range of three voltages, namely 6, 8 and 14. Suitable for larger bells, longer distances, door openers. It is 2 1/2 inches wide by 4 1/2 inches high and 1 1/2 inches thick. Has a strong metal case, black enameled finish. Directions for installing furnished. Shipping weight, about 3 pounds. Price, each,\$1.20

Electric Door Opener.

No. 57H6009 Fit this opener into the door casing. Pressing the button upstairs or in the back part of the house will permit the door to be opened. As easily installed as a door bell. Will operate from two dry batteries or transformers above. Shipping weight, about 2 pounds. Price,\$1.45

Jump Spark Coil.

No. 57H6511 High grade, suitable for use on any one-cylinder engine with a spark plug, regardless of horse power. It gives a hot, fat spark with very little current consumption, making it most effective and economical. Best results with four cells of battery. Shipping weight, 5 pounds. Price,\$2.65

Gasoline Engine Magnetos.

This illustration shows our jump spark magneto with belt drive.

Learn to Be a
Telegraph Operator.

TELEGRAPH INSTRUMENTS

Become an Expert
in Wireless.



Complete Two-Station Telegraph Sets for \$1.15 and \$2.45.

Consist of two boys' practical and complete telegraph sets with battery, wire, code chart, instructions and miniature telegraph blanks, all for \$1.15. The two instruments are well made with adjustable sounding levers, nickel plated and mounted on a neat wooden base. The stations may be set up in different parts of a house, different buildings, etc. The instructions are easy to follow; dots and dashes are very clear. A neat and efficient outfit that many boys have been waiting for.

No. 57H6464 Complete Two-Station Telegraph Set, with one dry cell, 25 feet insulated copper wire and instructions. Shipping weight, about 3½ pounds.

No. 57H6465 Same as No. 57H6464, but with two dry cells and 300 feet of wire. Shipping weight, about 6 pounds. Price.....\$2.45

If you want additional wire for use with the above instruments or for the Dry Battery Line Sets listed below, order No. 57H7900 Annunciator Wire No. 18, page 19.

Dry Battery Line Sets.



No. 57H6470 Dry Battery Line Set No. 1 consists of two of our Improved 4-Ohm Instruments No. 57H6461, with two instruction books, two bells No. 57H6000, two push buttons, two battery switches, four dry batteries and wiring diagrams for connecting. The circuit requires only two wires; is a full metal circuit and is not in use except when sending or receiving, thus avoiding short circuits or grounds on the line, which would run down the batteries. Calling can be accomplished from both ends of the line. Under such a scheme the dry batteries give very good service and last long time. This set will operate satisfactorily over 1,000 feet with only the four batteries we furnish, or, by the addition of more batteries, over much longer lines. Shipping weight, about 13½ pounds. Price, complete.....\$5.00

No. 57H6471 Dry Battery Line Set No. 2. A complete double set with four dry batteries and two battery switches, but without push button or bells. This set calls with the instrument, but batteries are not in use except when sending or receiving. Shipping weight, about 12½ pounds. Price.....\$4.25

Beginner's Wireless Practice Set, \$1.23.

For Learning the Wireless Code.



No. 57H7100 This set consists of a wireless key and buzzer mounted on a polished wood base. The key has black enameled frame, nickel plated lever and adjusting screws. The buzzer is nickel plated and reproduces the high pitched sounds of the wireless stations accurately. The three binding posts are so connected that the set may be used five different ways.

For the beginner this set has remarkable value. It not only provides an excellent method of quickly learning the code, but after the code is mastered the key may be used with a spark coil and the buzzer for testing detectors. By using our telephone induction coil No. 57H5657 the Practice Set may be used for class instruction, using wireless phones.

Complete with one dry cell, 3 feet insulated wire, diagram of connections, code chart and instructions. Size of base, 7x1½ inches. Shipping weight, about 4 pounds. Price.....\$1.23

Private Line Set.

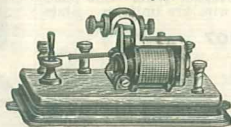


\$2.55
4-Ohm.

No. 57H6474 4-Ohm Private Line Set. Consists of our Aluminum Lever Giant Sounder No. 57H6480, and our Standard Steel Lever Key No. 57H6485, mounted on one base of polished hardwood. The quality and finish of this set is high grade throughout. Shipping weight, 2 pounds 13 ounces. Price.....\$2.55

No. 57H6475 20-Ohm Private Line Set. Same as above, except that sounder magnets are wound to a higher resistance to increase the sensitiveness. Two of these instruments can be operated from two dry batteries through a line resistance of more than 25 ohms, which is equivalent to a mile of 12-gauge iron wire. The distance can be extended by increasing the battery power. Shipping weight, 2 pounds 13 oz. Price.....\$2.75

Standard Relay, \$1.95.



No. 57H6488 20-Ohm Standard Relay. This relay is a very sensitive, nicely adjustable and handsomely finished instrument. Frame is lacquered brass; the armature is nickel plated. Mounted on a polished hardwood base with sub-base of black enameled cast iron. Suitable for telegraph lines up to 10 miles in length, and for burglar and fire alarm systems. Shipping weight, 2½ pounds. Price.....\$1.95

Legless Key, \$1.10.



No. 57H6485 Standard Steel Lever Key, legless. Steel lever and switch strap are heavily nickel plated and buffed. Black composition key and switch knobs. Fully adjustable. Shipping weight, 10 ounces. Price.....\$1.10

Giant Sounder, 4-Ohm, \$1.65.

No. 57H6480 4-Ohm Giant Sounder. This is a rapid, loud, aluminum lever sounder with a lacquered brass frame. Magnets are covered with polished hard rubber and leads are thoroughly insulated. The sounder is mounted so that a resonating air space is maintained between the base plate and the polished hardwood mounting board. All parts are adjustable. Shipping weight, 1½ lbs. Price.....\$1.65

No. 57H6481 20-Ohm Giant Sounder. Same as No. 57H6480, except that magnets are wound to a higher resistance to increase its sensitiveness over longer lines. Shipping weight, 1½ pounds. Price.....\$1.85

Steel Lever Key, \$1.20.



No. 57H6486 Standard Steel Lever Key with legs. Same as No. 57H6485, except that it is made with legs, 1¼ inches long, which pass through table clamping the key and serving as binding posts. Shipping weight, 12 ounces. Price.....\$1.20

Our Improved Learner's Telegraph Outfit, \$1.75 and \$2.35. Instruments, \$1.55 and \$1.75.

No. 57H6451 Our Improved Learner's Telegraph Outfit consists of a full size solid trunnion key, and a 4-ohm sounder mounted on a polished hardwood base. The sounder has a metallic base plate raised above the wood by three lugs, allowing a resonating air space, and resulting in a clear, loud sound. Sounder lever, sounding posts and key switch lever are of lacquered brass. Key lever is nickel plated and buffed. All parts are adjustable. A small instruction book, dry battery and connecting wire are included. Shipping weight, 5 pounds. Price.....\$1.75

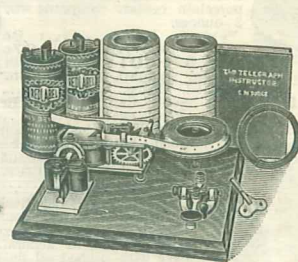


No. 57H6453 Our Special Learner's Telegraph Outfit includes an Improved 4-Ohm Learner's Instrument, described above, battery and connecting wire. A copy of "The Telegraph Instructor," a cloth bound 286-page textbook of telegraphy, is included instead of the small instruction book. Shipping weight, 5½ pounds. Price.....\$2.35

No. 57H6461 Improved 4-Ohm Learner's Telegraph Instrument, without battery or connecting wire. Shipping weight, 2½ pounds. Price.....\$1.55

No. 57H6463 Improved 20-Ohm Learner's Telegraph Instrument, the same as the 4-ohm instrument except that sounder is wound to 20 ohms to increase its sensitiveness. Shipping weight, 2 pounds 11 ounces. Price.....\$1.75

National Automatic Telegraph Transmitter.



The National Automatic Telegraph Transmitter consists of a clockwork motor, a record table and twenty-seven perforated tape records comprising beginning exercises, newspaper reports, service messages and numerous others, selected and graded so as to form a students' course in telegraphy. The tape records are drawn by the clockwork through a device for opening and closing the telegraph circuit. The speed can be regulated. A copy of "The Telegraph Instructor," a cloth bound 286-page textbook of telegraphy, is included. Any good key and sounder can be used with this instrument, hence we quote both with and without telegraph sets.

No. 57H6490 National Automatic Telegraph Transmitter with high grade key and giant sounder mounted on one polished oak base, two dry batteries and twenty-seven records. Shipping weight, 21 pounds. Price.....\$20.00

No. 57H6491 National Automatic Telegraph Transmitter without key, sounder or batteries. Shipping weight, 14½ pounds. Price.....\$16.00

FREE CATALOG

OF WIRELESS APPARATUS

A book every amateur should have. Eighty pages of interest to wireless experimenters. Illustrates wireless apparatus of very high quality, which is guaranteed to satisfy you in every respect. Our prices are low. When you receive your copy of this book, we are sure you will agree with us that we are offering a very complete line of keys, spark coils, condensers, spark gaps, switches, transformers, detectors, minerals, tuning coils, receivers, sending sets, receiving sets, and many miscellaneous items from which you can make a selection to fit your needs. We'd like to send you a copy of this fine book free of charge. If you will mail us a post card bearing your name and address and the words "Send me a copy of your free Catalog of Wireless Apparatus No. 65V," we will forward a copy with our compliments. Write for it today. Remember, it's free.

VARIABLE CONDENSER.

We sell this high grade Variable Condenser No. 57H7130 for \$4.00. Well made; mounted in oiltight hard rubber composition case. Contains 43 plates. Capacity, .001 mf. Fitted with 180-degree scale. Has knob handle to which arrow indicator is attached.



SEARS, ROEBUCK AND CO. CHICAGO



Home and Shop Phones

Can you talk from your home to your neighbors, to your barn or garage, from your bedroom to the kitchen downstairs, from your house to your office, from your home to your helpers?

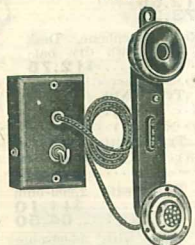
Save the thousands of needless steps and the many lost minutes by installing telephones. Our intercommunicating battery phones are intended for just this kind of service, where the distance between telephones is not great, but the number of times you want to talk between these points will make these telephones a great convenience.

Run a telephone line to your neighbor's house if the distance is short. Enjoy a friendly chat in your leisure moments when the time or weather makes a personal visit impracticable.

These telephones are easily installed and directions are furnished with each instrument. You will be delighted to find how easily these telephones can be put up and connected and with the resulting convenience. If you want help in figuring out what is needed for your telephone line or in determining the cost, we will be glad to have you write us.



Hand Telephone for Two-Station Line



A very compact, thoroughly high grade hand telephone that can be placed on a table or hung on the wall.

The rectangular box contains a calling buzzer and has a hook for hanging up the phone. However, it is not necessary to hang it up to shut off the phone; just lay it on the table. If you want to call the other station, just press the little button in the handle. It can be used in pairs or in connection with Wall Phone No. 57H5590 at right. Order four dry batteries and enough wire, No. 57H7919 or No. 57H7920, page 29, to run between the two

stations. It will operate 600 feet with No. 18 gauge wire or longer distances with larger wire.

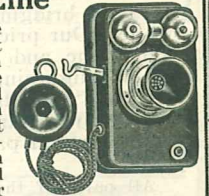
No. 57H5595 Two-Station Hand Telephone Sets. Shipping weight, 5 pounds. Price, per pair, without batteries or wire.....\$10.60

No. 57H5596 Two-Station Hand Telephone Sets. Shipping weight, 15 pounds. Price, per pair, with four Stand-By dry batteries, but no wire.....\$11.60

No. 57H5593½ One Hand Set and One Wall Telephone. Shipping weight, 5½ pounds. Price, without batteries or wire.....\$8.47



Wall Telephone for Two-Station Line



A very efficient and nice appearing telephone built for single line service with a station at each end. The material, workmanship and finish are strictly high grade throughout. Will not detract from the appearance of any room in which you may install it. It will ring satisfactorily over lines of 600 feet on using our No. 57H7919 or No. 57H7920 Twisted Pair Wire (only one length needed), and four dry batteries, shown on page 18 (longer distances require larger gauge wire). One of these can be used with one of the hand telephones, No. 57H5595, at the left.

No. 57H5590 Two-Station Wall Telephones. Shipping weight, 5½ pounds. Price, per pair, without batteries or wire.....\$6.35

No. 57H5591 Two-Station Wall Telephones. Shipping weight, 16 pounds. Price, per pair, with four Stand-By dry batteries, but no wire.....\$7.35

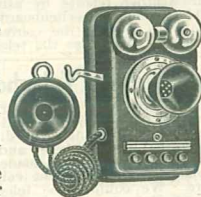
No. 57H5593½ Wall Telephone and One Hand Telephone. Shipping weight, 5½ pounds. Price, without batteries or wire.....\$8.47

Wall Telephones for Several Stations

Four-Button Type.

This telephone is the same as No. 57H5598 shown to the right, except that it has four buttons and can be used for a five-station line. Pressing one of the buttons at your station rings the bells on only one of the other four phones. For the necessary wire, measure from the first station to the last in a continuous line, touching at all the stations. Multiply the total distance by the number of stations plus three. For instance, for four telephones, multiply the distance by seven. Order wire No. 57H7900 or No. 57H7902 on page 19. One impedance coil such as No. 57H5650 shown below and five dry cells are required for a system of three to five phones. All parts of these phones are carefully designed, correctly made, and beautifully finished in dull black and nickel.

No. 57H5599 Four-Button Wall Telephone. Shipping weight, about 3 pounds. Price, each, without wire, batteries or impedance coil.....\$5.30



Single-Button Type.

This type of telephone is intended for lines of three to six telephones. Pressing the button at any one of the stations rings all the bells. Use a code system of ringing, such as one ring for the kitchen, two rings for upstairs, three for the basement, four for the garage, etc. For the necessary wire, measure from the first station to the last in a continuous line, touching at all stations. Three wires must be used, hence multiply the distance by three. Our No. 57H7900 or No. 57H7902 shown on page 19 can be used when the distance between first and last phones is not over 600 feet. One impedance coil such as No. 57H5650 shown below and five dry cells are required for every system of three to six phones. These telephones are sturdily built and beautifully finished in dull black and nickel. Very compact; back of box, 4¼x6¾ inches.

No. 57H5598 Single-Button Wall Telephone. Shipping weight, each, about 3 pounds. Price, each, without wire, batteries or impedance coil.....\$4.65

Two-Station Phones, \$3.75 a Pair



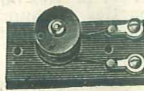
No. 57H5565 These telephones are not as well built nor as nicely finished as ones listed above. Give service between any two points not over 500 feet apart. Strongly made, remarkably efficient, very compact and finished in black enamel and nickel plate. Easily installed as a door bell—four batteries (any kind, wet or dry), and only two wires required.

Use wire such as No. 57H7900 on page 19, or No. 57H7920 on page 29. We furnish wiring directions. Shpg. wt., 5 lbs. Price, per pair, without batteries.....\$3.75

No. 57H5566 Battery Phones. Shipping wt., 16 lbs. Price, per pair, with four Red Label Dry Batteries.....\$4.65

Impedance Coils

No. 57H5650 For use with our No. 57H5580, No. 57H5585, No. 57H5598 and No. 57H5599 Home Telephones. One coil required to each system of three to six of the above phones. Shipping wt., about 12 oz. Price.....60¢



Intercommunicating Phones

No. 57H5580 Look exactly like our No. 57H5565 pictured at the left. Constructed to allow three to six phones on a line. All bells ring together, hence different signals should be employed. For the necessary wire measure from the first station to the last on a continuous line touching at all stations and multiply the total distance by 4. Order annunciator wire such as No. 57H7900 on page 19. We furnish wiring directions. One impedance coil, described above, and four or five dry batteries also needed. Shipping weight, about 5 pounds. Price, each, without batteries or coil.....\$2.20

Three to Six-Station Private Phones

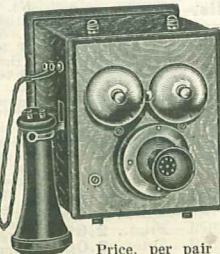
No. 57H5585 An inexpensive but serviceable phone, not as well built as our No. 57H5599 nor as nicely finished. Equipped with five push buttons to ring five other phones within a distance of 500 feet. For the necessary wire measure from the first station to the last in a continuous line touching at all the stations. Multiply the total distance by the number of stations, plus 3. For instance, for four phones multiply the distance by 7. Order wire No. 57H7900, on page 19. We send wiring directions. One impedance coil No. 57H5650, described at the left, and four or five dry batteries are also required. Shipping weight, about 5 lbs. Price, each.....\$3.20



Series Magneto Phones, \$10.80 a Pair.

No. 57H5570 Built for longer distances than our battery phones and will operate satisfactorily on lines 5 miles in length. Can only be used in pairs. Can be used with copper or iron wire (see page 19 under No. 57H7900 and page 29 under No. 57H7914). Equipped with a high grade transmitter, receiver and a three-magnet pony generator. The cases are of oak, and metal parts are heavily nickel plated. Shipping weight, per pair, 46 pounds. Price, per pair (two telephones).....\$10.80

Four dry batteries included with each pair.



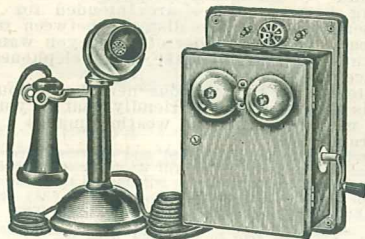
TELEPHONES

Magneto and Battery.

This desk set is made for us under our directions and combines excellent quality with a very low price. It is a standard bridging magneto telephone and can be used on any magneto telephone line with phones similar to the Compact or Southwestern bridging telephones shown on this page. Our prices include a complete desk telephone and generator and ringer box with a lightning arrester mounted on the box. We also furnish two dry batteries with each instrument. The generator and ringer box is highly polished oak and all exposed metal parts are finished in black enamel and nickel plate.

All parts of these telephones have been carefully designed, mechanically and electrically. The generators have $\frac{3}{4}$ -inch laminated magnets.

In ordering for a new line it is always best to select telephones all with the same ohms resistance. And, when adding telephones to a line, order those of the same ohms resistance as the ones already installed.



Our New Desk Telephone.

Series and Bridging.

No. 57H5540 Six-Magnet Bridging Telephone, Desk Type, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$11.85
6 telephones and twelve batteries..... 69.10

No. 57H5541 Six-Magnet Bridging Telephone, Desk Type, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$12.25
6 telephones and twelve batteries..... 71.45

No. 57H5542 Six-Magnet Bridging Telephone, Desk Type, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$12.55
6 telephones and twelve batteries..... 73.20

No. 57H5543 Six-Magnet Bridging Telephone, Desk Type, with 2,500-ohm ringer. Price, with two dry batteries, each.....\$12.75
6 telephones and twelve batteries..... 74.30

No. 57H5545 Five-Magnet Bridging Telephone, Desk Type, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$10.60
6 telephones and twelve batteries..... 61.25

No. 57H5546 Five-Magnet Bridging Telephone, Desk Type, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$10.80
6 telephones and twelve batteries..... 62.45

No. 57H5547 Five-Magnet Bridging Telephone, Desk Type, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$11.10
6 telephones and twelve batteries..... 64.50

No. 57H5548 Five-Magnet Bridging Telephone, Desk Type, with 2,500-ohm ringer. Price, with two dry batteries, each.....\$11.60
6 telephones and twelve batteries..... 67.25

Shipping weight of any of these desk telephones, about 45 pounds.

Use the Telephone.

If you have a telephone line in your neighborhood make arrangements to connect with it. Get into communication with your neighbors. Know what they are getting for their crops, their livestock or their dairy products. In case of an emergency, such as sickness or fire, use the telephone.

If you and your neighbors will get together you can construct a telephone line at a surprising low cost. Run a line to town. Know the market prices, buy and sell by telephone, get the weather reports by using the telephone. Hundreds of our telephones and many of our switchboards have gone to just such groups of neighbors who have learned the convenience, the saving and the sociability which it promotes. They use the telephone.

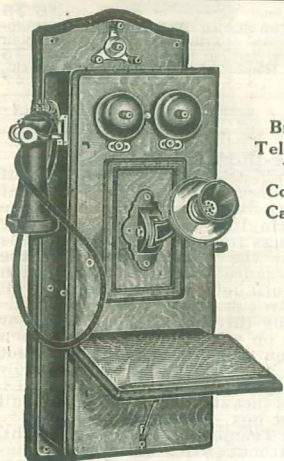
Concerning Our Compact and Southwestern Telephones.

Each telephone is made in one factory and repair parts can be furnished at any time. We equip all these telephones with our very latest solid black granular carbon button transmitter—a loud, clear speaking long distance transmitter. Receivers are of the latest improved bi-polar type, and have concealed connections and heavy durable cord. Ringers are made with adjustable armatures and durable nickel plated frames and the coils are wound with modern enameled magnet wire. We equip these telephones with our long lever switch hook. The frame and hook are separated from the contact springs by proper insulation. Two-path carbon arrester offers a maximum of protection from lightning discharges.

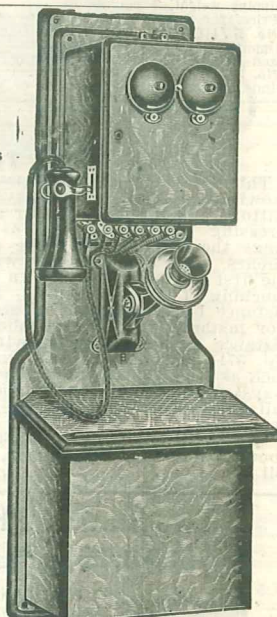
Bridging telephones are the standard for party lines and we recommend their use. We carry the series type in stock for private line and city exchange work, where they give excellent service. Series and bridging telephones cannot be operated successfully on the same line.

All telephones on one line should be of the same resistance.

Bridging
Telephones
With
Compact
Cabinets.



Bridging
Telephones
With
Southwestern
Cabinets.



No. 57H5500 Five-Magnet Compact Bridging Telephone, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$10.70
6 telephones and twelve batteries..... 61.95
No. 57H5501 Five-Magnet Compact Bridging Telephone, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$11.00
6 telephones and twelve batteries..... 63.95
No. 57H5502 Five-Magnet Compact Bridging Telephone, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$11.40
6 telephones and twelve batteries..... 65.90
No. 57H5503 Five-Magnet Compact Bridging Telephone, with 2,500-ohm ringer. Price, with two dry batteries, each.....\$11.80
6 telephones and twelve batteries..... 67.75
No. 57H5506 Four-Magnet Compact Bridging Telephone, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$10.00
6 telephones and twelve batteries..... \$57.90
No. 57H5507 Four-Magnet Compact Bridging Telephone, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$10.30
6 telephones and twelve batteries..... 59.50
No. 57H5508 Four-Magnet Compact Bridging Telephone, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$10.70
6 telephones and twelve batteries..... 61.95
Shipping weight, Compact Telephone, 43 pounds.

Push Buttons and Condensers.

Telephones equipped with push buttons can call Central without disturbing any of the other parties on that line, or can ring the other parties without calling Central, provided every telephone on that line is equipped with a push button.

They can be used only on phone metallic (two-wire) lines where there is a central office or switchboard connecting several lines having bridging telephones only. When the telephones are equipped with condensers, the bells may be rung, although the receivers are off their hooks. Condensers can be used on metallic or grounded lines.

Any of our bridging telephones will be equipped with push buttons and condensers at the following prices:

No. 57H5601 Push Buttons, extra, per telephone. (Shipping weight, 2 ounces)...40c

No. 57H5602 Condensers, extra, per telephone. (Shipping weight, 7 ounces)...50c

No. 57H5603 Push buttons and condensers, extra, per telephone. (Shpg. wt., 8 oz.)85c

Extension Bells.

May be connected to any telephone and placed at some distant point in same or other buildings where telephone bell might not be heard. May also be used for code signaling by means of a magneto. Extension bell should be of same ohms resistance as telephone to which it is connected. Order enough wire No. 57H7920, page 29, to make connections. Shipping weight, for any style, 5 pounds.

No. 57H5670 80-Ohm Extension Bell. Price...\$1.60
No. 57H5671 1,000-Ohm Extension Bell. Price... 2.40
No. 57H5672 1,600-Ohm Extension Bell. Price... 2.80
No. 57H5673 2,000-Ohm Extension Bell. Price... 3.00
No. 57H5674 2,500-Ohm Extension Bell. Price... 3.15



Series Compact Telephones.

Series telephones can be furnished in the Compact style of cabinet, as illustrated under Bridging Telephones. Series telephones are intended only for private lines between two parties, or for use on single party lines having a switchboard at a central office. They are equipped with three-magnet generators and 80-ohm ringers.

No. 57H5530 Compact Telephone with two dry batteries. Shipping weight, 41 pounds. Price, each.\$ 8.40
6 telephones and twelve batteries..... 49.35
No. 57H5532 Southwestern Telephone with two dry batteries. Shipping wt., 52 lbs. Price, each.\$ 8.70
6 telephones and twelve batteries..... 51.75
With two wet batteries. Shipping weight, 66 pounds. Price, each.....\$ 8.95
6 telephones and twelve batteries..... 52.40

No. 57H5515 Five-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$11.15
6 telephones and twelve dry batteries.....\$64.90
Price, with two wet batteries, each.....\$11.45
6 telephones and twelve wet batteries..... 66.30
No. 57H5516 Five-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$11.45
6 telephones and twelve dry batteries..... 66.65
Price, with two wet batteries, each..... 11.70
6 telephones and twelve wet batteries..... 68.15
No. 57H5517 Five-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$11.95
6 telephones and twelve dry batteries..... 69.45
Price, with two wet batteries, each..... 12.25
6 telephones and twelve wet batteries..... 70.95
No. 57H5518 Five-Magnet Bridging Telephone, Southwestern style, with 2,500-ohm ringer. Price, with two dry batteries, each.....\$12.35
6 telephones and twelve dry batteries..... 71.30
Price, with two wet batteries, each..... 12.50
6 telephones and twelve wet batteries..... 72.90
Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.
No. 57H5521 Four-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each.....\$10.15
6 telephones and twelve dry batteries..... 59.50
Price, with two wet batteries, each..... 10.35
6 telephones and twelve wet batteries..... 60.70
No. 57H5522 Four-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each.....\$10.45
6 telephones and twelve dry batteries..... 61.30
Price, with two wet batteries, each..... 10.70
6 telephones and twelve wet batteries..... 62.80
No. 57H5523 Four-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each.....\$10.80
6 telephones and twelve dry batteries..... 63.40
Price, with two wet batteries, each..... 11.05
6 telephones and twelve wet batteries..... 64.90
Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.

A WORD ABOUT SWITCHBOARDS

If you are thinking of forming a telephone company it will pay you to consider the location and style of a switchboard even though the number of subscribers or owners of telephones is not large enough to warrant the installation of a board at present.

Is Your Line Always Busy?

If you have a line and the number of telephones on your line is so great that the service is becoming poor, it is time you considered buying a switchboard. The service will be so much improved that you will be well repaid for the small expenditure. Every year we supply a great many switchboards to groups of telephone users forming mutual telephone companies and to rural telephone companies already established.

Where to Put the Switchboard.

First of all determine where you would like to have the switchboard. Place it as near as possible to the center of all of the homes having telephones; that is, where the branch lines will be the shortest. Also take into account the probable growth of business and the new lines that will be built.

How to Select a Switchboard.

Of course you want the best you can obtain for the money. On the pages which follow we show three different types of switchboards at prices which will save you money, and we have tried to explain in a short space how to select a switchboard and to figure its cost.

We Will Advise You Without Obligation.

If you do not know just what board to select, write us, answering the following questions:

- 1—How many lines will there be at the start?
- 2—How many lines are one-wire or grounded lines?
- 3—What is the resistance in ohms of the telephones on each line?
- 4—Do you expect to run new lines soon? How many?

Our engineers will be glad to tell you of the best equipment for your use, and will tell you the cost. They will also answer any other questions which you may wish to ask about your equipment.

Cordless Relief Switch.

For Many-Party Lines.



This cordless relief switch is designed for toll extension lines and to relieve a heavily loaded line by dividing it into two lines. It thus serves as a two-line switchboard. By dividing the line fewer signals are needed and better service results. Neighbors on one half of divided line can talk while those on other half are also talking. The operator can connect his phone to either half by simply shifting the key lever (see top of relief switch). While his phone is connected to one half the bells of the relief switch are connected to the other half, so that any of the parties can call him at any time. He can connect both halves of the line by simply placing the key lever in a vertical position. He will also be connected. They are easily installed. Directions are furnished. Shipping weight, any style, about 4 pounds.

No. 57H5730	With 1,000-Ohm Ringer.	Price.....	\$4.25
No. 57H5731	With 1,600-Ohm Ringer.	Price.....	4.55
No. 57H5732	With 2,000-Ohm Ringer.	Price.....	4.85
No. 57H5733	With 2,500-Ohm Ringer.	Price.....	5.00

Relief Switch.

This switch is used for the same purpose as the one to the left but is not quite as compact or convenient. It consists of an extension bell ringer, three jacks and a cord and plug. Connections are made by shifting the plug. Shipping weight, about 5 pounds.



No. 57H5714	With 1,000-Ohm Ringer.	Price...\$4.35
No. 57H5715	With 1,600-Ohm Ringer.	Price... 4.65
No. 57H5716	With 2,000-Ohm Ringer.	Price... 4.95
No. 57H5717	With 2,500-Ohm Ringer.	Price... 5.25

Extension Bell Unit.

This unit, which may also be called a single line ringer board, consists of an indicating bell with two jacks connected in multiple. It is used where the capacity of an indicating bell switchboard, like our No. 1 or No. 2 Boards, has been exhausted and an additional line desires to come in. One of these extension bell units can be installed for each new line that comes in after the switchboard is full, and as many may be put in as space will permit. They are mounted on the wall alongside the board and connection made with the plug the same as though the unit was a part of the switchboard.

These extension bell units may also be used in cases where a branch line desires to come in and connect with the main line. Prices for Extension Bell Units are as follows:

No. 57H5718	With 1,000-Ohm Ringer.	Price, each.....	\$4.20
No. 57H5719	With 1,600-Ohm Ringer.	Price, each.....	4.54
No. 57H5720	With 2,000-Ohm Ringer.	Price, each.....	5.46
No. 57H5721	With 2,500-Ohm Ringer.	Price, each.....	5.85

These prices do not include cord and plug. Shipping wt., any style, about 1 lb. Extension bell units should be ordered with ringers of the same ohms resistance as the telephones on the lines with which they are to be connected.

Receivers and Receiver Shells.



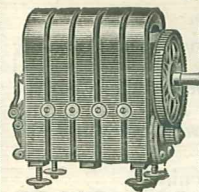
No. 57H5605 Bi-Polar Receiver, furnished with our magneto telephones. Shipping weight, 1 pound 5 ounces. Price, each.....\$1.05
No. 57H5606 Receiver Shell. Shipping wt., 1½ lbs. Price, each.....35c

Receiver Cord.



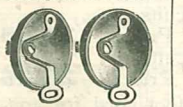
36-inch. Note two types of terminals. Shipping wt., either style, 2 ounces.
No. 57H5685 Cord with two straight and two spade terminals. Price, per pair.....20c
No. 57H5686 Cord with four straight terminals. Price, per pair.....20c

Generators.



These generators are the same as furnished with all our magneto telephones. Magnets are made of high grade magnet steel and the armatures are of laminated Norway iron wound with silk insulated magnet wire.
No. 57H5610 3-Magnet Series Generator. Shipping weight, about 8½ pounds. Price.....\$2.65
No. 57H5612 4-Magnet Series Generator. Shipping wt., about 10½ pounds. Price.....\$3.30
No. 57H5614 4-Magnet Bridging Generator. Shipping weight, about 10½ pounds. Price.....\$3.90
No. 57H5616 5-Magnet Bridging Generator. Shipping weight, about 13 pounds. Price.....\$4.35

Telephone Bells.



No. 57H5635 Nickel plated, adjustable mounting brackets, as furnished with our magneto telephones. Shipping weight, 7 oz. Price, per pair.....35c

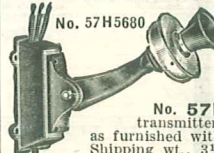
Switch Hooks.



No. 57H5640 Long lever type, used on our Compact and Southwestern style telephones. Shpg. wt., 11 oz. Price, each.....50c

PARTS AND PROTECTORS FOR MAGNETO TELEPHONES.

Adjustable Arm and Transmitter.



No. 57H5680 Adjustable Arm with transmitter and induction coil. Same as furnished with our Southwestern style telephones. Shipping weight, 4 pounds. Price, each.....\$2.25
No. 57H5681 Adjustable Arm with transmitter, without induction coil. Same as furnished with our Compact style telephones. Shipping wt., 3½ lbs. Price, each.....\$1.85

Transmitters.



No. 57H5600 Solid Back Transmitter. Button type granular carbon transmitter, same as furnished with our Compact and Southwestern style telephones. Shipping wt., 1½ lbs. Price, each.....\$1.45

Induction Coils.



Silk wound as furnished with our Compact and Southwestern telephones. Shipping wt., any size, about 6 ounces.
No. 57H5654 75 ohms. Price.....40c
No. 57H5655 250 ohms. Price.....47c
No. 57H5657 500 ohms. Price.....62c
No. 57H5623 1,600 Ohms Bridging. Price.....2.10
No. 57H5625 2,000 Ohms Bridging. Price.....2.30
No. 57H5627 2,500 Ohms Bridging. Price.....2.65

Carbon Block Arrester.

No. 57H5756 A standard toll and rural line carbon block lightning arrester. Consists of three carbon blocks, separated at the edges by insulating cloth, allowing a very large discharge surface. The carbons are held by brass mountings on a porcelain base, 2x3½ inches by about ¾ inch thick. Efficient indoor arrester, suitable for one or two-wire lines. Shipping weight, 1½ pounds. Price, each.....30c

Ringers.

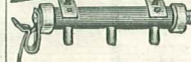


Adjustable armature as furnished with our magneto telephones. Shipping wt., 1½ pounds.
No. 57H5619 80 Ohms Series. Price.....\$1.05
No. 57H5621 1,000 Ohms Bridging. Price.....\$1.65



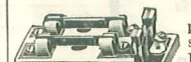
No. 57H5623 1,600 Ohms Bridging. Price.....2.10
No. 57H5625 2,000 Ohms Bridging. Price.....2.30
No. 57H5627 2,500 Ohms Bridging. Price.....2.65

Outdoor Arrester.



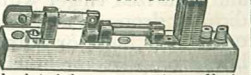
No. 57H5763 High grade self cleaning, equipped with clips, which can be attached to the line without cutting the wire. Consists of a grounded carbon rod, incased in a brass shell and insulated from it. The entire surface of the rod is exposed to the inner surface of the shell. Length over all, about 7 inches. Shipping weight, 8 ounces. Price, each.....60c

Fuse Blocks.



No. 57H5750 Single pole porcelain fuse block. Western Union style, with mica insulated carbon lightning arrester and brass mountings, for use on grounded or single lines. Porcelain base, about ¾x4¼x½ inches. Shipping weight, 5 oz. Price, each, with one copper tip fuse.....23c
No. 57H5751 Double pole fuse block. Western Union style, but arranged for two fuses and lightning arresters for use on metallic or two-wire lines. Base, about 1¼x4¼x½ inches. Shipping weight, 10 ounces. Price, each, with two copper tip fuses.....30c
No. 57H5754 Single pole porcelain fuse block. Postal style, with mica insulated carbon lightning arrester. Postal fuses are held by screws. All metal parts are brass. Shipping weight, 5 ounces. Price, each, with one copper tip Postal fuse.....23c
No. 57H5755 Double pole porcelain fuse block. Postal style, with mica insulated carbon lightning arresters. Shipping weight, 10 ounces. Price, each, with two copper tip Postal fuses.....30c

Protector and Cut-Out.

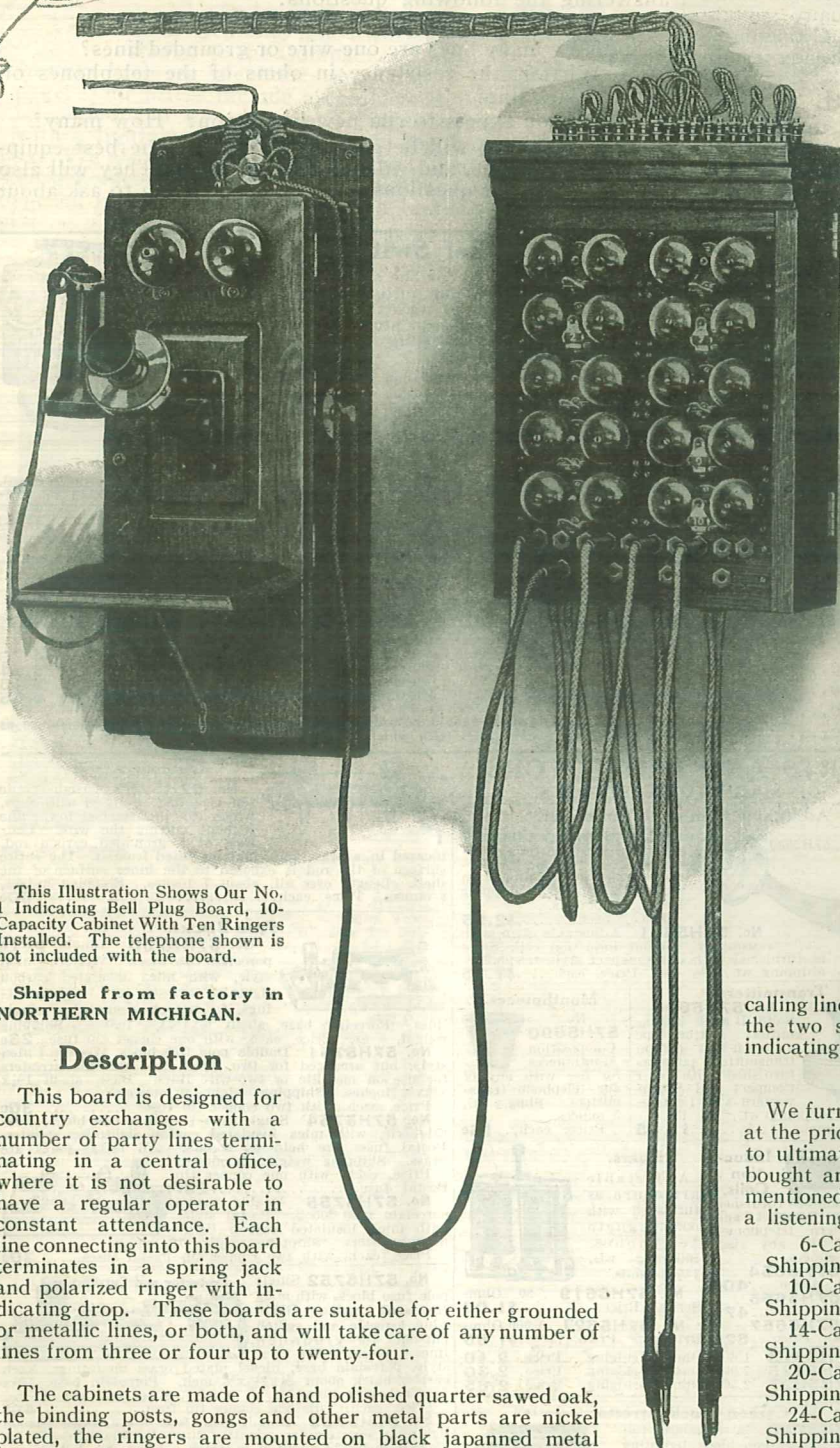


No. 57H5752 Single pole fuse block, with mica insulated carbon lightning arrester and switch cut-out, for grounded lines. Western Union style. Porcelain base, nickel plated brass mountings. Each carbon block about ¾x1½x¼ inch. Porcelain base, 1¾x7½ inches by about ¾ in. thick. Shpg. wt., abt. 12 oz. Price, each, with one copper tip fuse.....48c
No. 57H5753 Double pole fuse block, with carbon lightning arresters for metallic lines. Porcelain base, about 2¾x7½ inches by about ¾ in. thick. Shpg. wt., 1 lb. 15 oz. Price, each, with two copper tip fuses.....85c

Fuses. Per 100 Per Doz.
No. 57H5760 Western Union, copper tip.....\$1.00 12c
No. 57H5761 Postal, copper tip.....1.10 15c
No. 57H5762 Veribest Glass Inclosed Fuses, for Western Union fuse blocks. Shipping wt., per dozen, 2 oz. Price, per 100, \$1.50; per dozen.....15c

No. 1 Indicating Bell Plug Board

No. 57H5704



This illustration shows our No. 1 Indicating Bell Plug Board, 10-Capacity Cabinet With Ten Ringers installed. The telephone shown is not included with the board.

Shipped from factory in
NORTHERN MICHIGAN.

Description

This board is designed for country exchanges with a number of party lines terminating in a central office, where it is not desirable to have a regular operator in constant attendance. Each line connecting into this board terminates in a spring jack and polarized ringer with indicating drop. These boards are suitable for either grounded or metallic lines, or both, and will take care of any number of lines from three or four up to twenty-four.

The cabinets are made of hand polished quarter sawed oak, the binding posts, gongs and other metal parts are nickel plated, the ringers are mounted on black japanned metal panels, and every detail of construction is guaranteed both mechanically and electrically.

It is as easy to install one of these boards as it is to put in a telephone, as there is no wiring whatever to be done on the board. They come fully wired and need not even be opened. The lines

terminating in the board are simply connected to the binding posts on top of the cabinet and it is ready for use. Simple and easily understood instructions, together with blue print showing the wiring system, are sent with each board.

This board must be used in conjunction with a telephone, and, for convenience, it is usually put up on the wall right next to the telephone, as shown in our illustration. Connection from the board to the telephone is made by means of the operator's plug and switchboard cord which is included with each board.

The operation of this board is extremely simple. A certain signal is agreed upon for Central (one long ring, for example), and the party taking care of the board knows from this signal when Central is wanted, and the indicating drop shows which line is calling. As the bells can be heard for some distance, the operator need only go to the board when Central is called.

Supposing a subscriber on one of the lines terminating in this board wishes to talk with a subscriber on another line. He signals Central, and the operator, hearing the signal, goes to the board, notes by the indicating drop which line is calling, plugs into the indicated jack, and asks over the telephone what line is wanted. Upon getting this information from the calling subscriber, the operator plugs into the jack of the wanted line, and, with the receiver on the hook, gives the crank of the operator's telephone the proper turns to signal the wanted subscriber. When this subscriber answers, the operator's plug is withdrawn and the plug of the calling line is placed in the jack of the called line, thus connecting the two subscribers. When these subscribers ring off, the indicating drop falls, and the operator takes down the plugs.

Cabinets

We furnish the cabinets in 6, 10, 14, 20 and 24-line capacity at the prices quoted below. They are fully wired and jacked to ultimate capacity so that indicating bell ringers can be bought and installed as lines are added. Each cord circuit mentioned in the list below includes two cords and plugs and a listening-in jack.

6-Capacity Cabinet, with three cord circuits.	
Shipping weight, equipped, about 38 lbs.	Price... \$11.75
10-Capacity Cabinet, with four cord circuits.	
Shipping weight, equipped, about 40 lbs.	Price... 15.24
14-Capacity Cabinet, with five cord circuits.	
Shipping weight, equipped, about 46 lbs.	Price... 20.00
20-Capacity Cabinet, with five cord circuits.	
Shipping weight, equipped, about 55 lbs.	Price... 24.55
24-Capacity Cabinet, with six cord circuits.	
Shipping weight, equipped, about 60 lbs.	Price... 28.26

These prices include operator's plug with 6-foot cord for connecting with operator's telephone, but do not include ringers, repeating coils nor lightning arresters, which we install on the board in accordance with the purchaser's requirements, as explained on the following page.

No telephone is included with these boards.

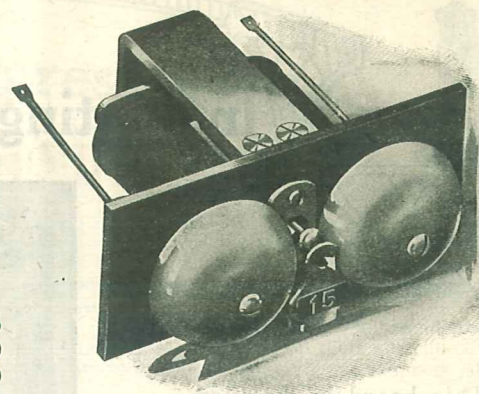
Indicating Bell Ringers

An indicating bell ringer consists of a polarized ringer and two 1 $\frac{3}{4}$ -inch nickel plated gongs with indicating drop, mounted on black japanned metal panel. When a subscriber signals Central, the clapper, vibrating between the gongs, rings them, and at the same time releases the drop, which falls and indicates the calling line. Our ringers are made with the drops hinged below the clapper so they do not retard its action, and therefore never stick. They have no keys to get out of order, and you will have little or no trouble with them as the construction is very simple, yet very substantial, and the action sure and positive.

Ringers will be installed on the board at the following prices:

No. 57H5710 $\frac{1}{3}$	1,000-Ohm Ringers, complete.	Price, each.	\$1.35
No. 57H5711 $\frac{1}{3}$	1,600-Ohm Ringers, complete.	Price, each.	1.60
No. 57H5712 $\frac{1}{3}$	2,000-Ohm Ringers, complete.	Price, each.	1.90
No. 57H5713 $\frac{1}{3}$	2,500-Ohm Ringers, complete.	Price, each.	2.15

Weight of additional ringers shipped singly, about 3 pounds.



Indicating Bell Ringer.

Each ringer installed on the board must be of the same ohms resistance as the telephones on the line connected. For example, a line with 1,600-ohm telephones must have a 1,600-ohm ringer on the board, or a line with 2,500-ohm telephones must terminate in a 2,500-ohm ringer on the board.

Repeating Coils

If part of the lines coming in on the board are metallic (two-wire) systems, and part are grounded (one-wire) systems, so that it is often necessary to establish connections between metallic and grounded lines, a repeating coil should be wired into one or more of the cord circuits. If half of the lines are metallic and half grounded, then half the cord circuits should have repeating coils. For example, if there are ten lines, thus requiring four cord circuits, five of these lines metallic and five grounded, two of the cord circuits should have repeating coils. If two of the ten lines are metallic and eight grounded, or vice versa, eight metallic and two grounded, then it will be sufficient to equip one cord circuit with repeating coil. The idea is simply to provide a sufficient number, so that, as a rule, a cord circuit with repeating coil will be available when needed. Shipping weight, about 5 pounds.

Repeating Coils, installed on board. Price, each... **\$2.70**

Lightning Arresters

Every switchboard should be equipped with our Combination Carbon and Fuse Lightning Arresters, as they afford better protection against damage by lightning. One single arrester should be put in for each grounded line terminating in the board, and one pair for each metallic line terminating in the board. Shipping weight, per bank of three, about 1 pound.

Combination Carbon and Fuse Lightning Arresters, mounted on panel.	Price, each.....	\$0.15
Extra Fuses, Western Union Style, Copper Tips.	Price, per 100.....	1.10
Price, per dozen.....		.15

Example of Cost Complete

To figure the entire cost of a board, simply add the cost of the necessary number of ringers, repeating coils and lightning arresters to the cost of the cabinet.

Take, for example, an exchange with ten country lines, six of which are equipped with 1,600-ohm ringers and four with 2,500-ohm ringers, two of these lines metallic and eight grounded. For such an exchange we recommend our No. 57H5704 14-capacity cabinet, thus providing for the addition of four more lines as the exchange grows, and at the start it must be equipped with six 1,600-ohm ringers, four 2,500-ohm ringers, one repeating coil and twelve lightning arresters (two for each metallic line and one for each grounded line), making the total cost \$42.70, which is figured as follows:

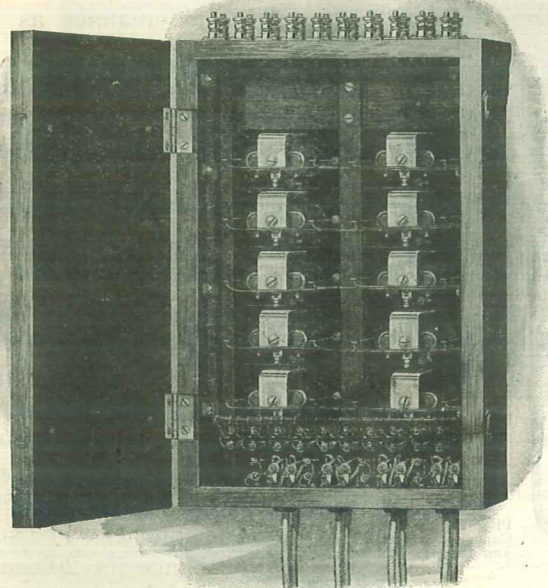
One 14-Capacity Cabinet with five circuits.	Price.....	\$20.00
Six 1,600-Ohm Indicating Ringers, at \$1.60 each.....		9.60
Four 2,500-Ohm Indicating Ringers, at \$2.15 each.....		8.60
One Repeating Coil.....		2.70
Twelve Combination Carbon and Fuse Lightning Arresters, at 15 cents each.....		1.80

Total Cost..... **\$42.70**

We advise purchasers to order boards of greater capacity than will be needed at the start, because it is our experience that when an exchange is once established, it is usually but a short time until it is desired to connect additional lines, and by getting a board of greater capacity than required at the start, future growth is provided for.

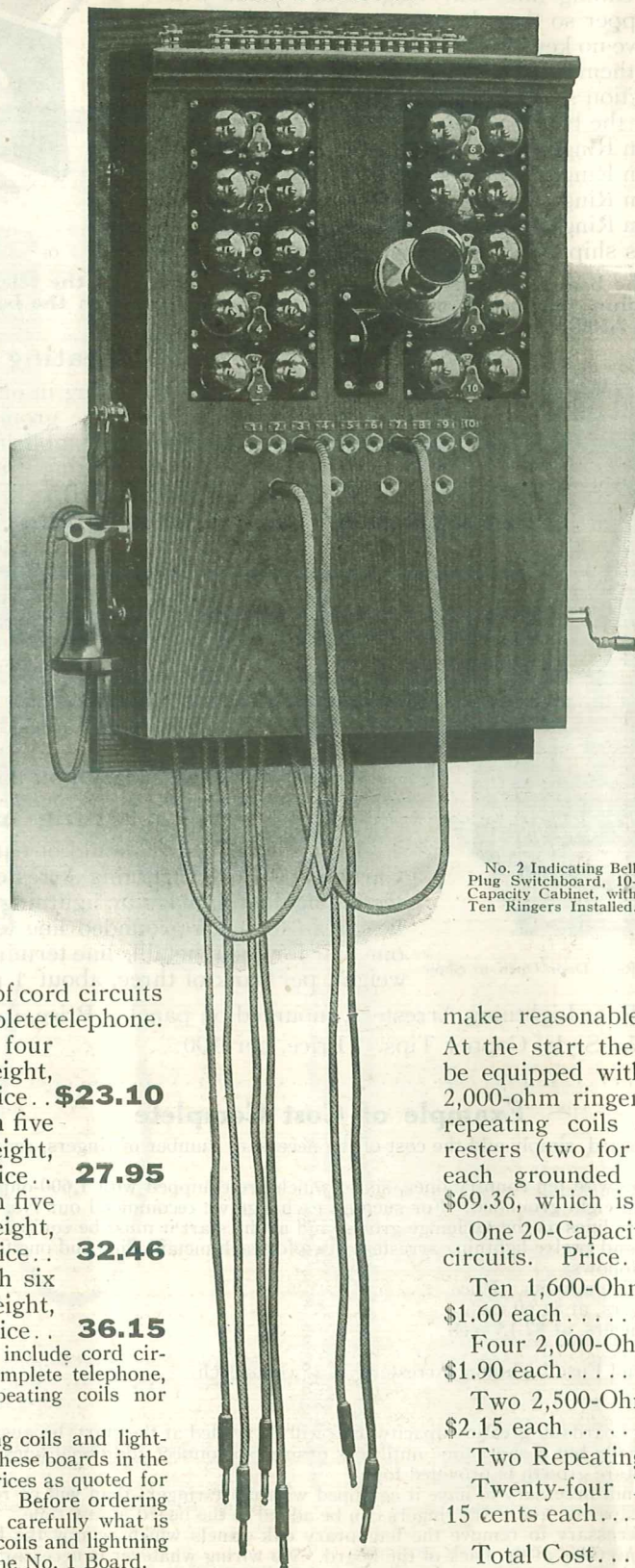
When ordering the board it is not necessary to have it equipped with more ringers than will be required at the start, as each board is sent out fully wired to its ultimate capacity, and extra ringers can be added to the board at any time. It is very easy to put in additional ringers when needed, as it is only necessary to remove the temporary oak panels which occupy the blank spaces on the board, set the ringers in position and make two connections at the back of the board. No wiring whatever is necessary.

If you have any trouble whatever figuring the cost of a board, answer all of the questions on page 23, and we will figure for you without any obligation on your part—you do not have to buy.



No. 1 Indicating Bell Plug Board With Rear Door Open to Show Interior.

No. 2 Indicating Bell Plug Switchboard No. 57H5706



No. 2 Indicating Bell Plug Switchboard, 10-Capacity Cabinet, with Ten Ringers Installed.

This board is designed for the same purpose as our No. 1 Indicating Bell Plug Board, and is of exactly the same construction, except that it is equipped with operator's complete telephone, consisting of powerful five-bar generator, receiver and cord; switch hook, transmitter, transmitter arm, induction coil and condenser. Instead of using a separate telephone, as with our No. 1 Board, the operator's telephone is complete in the switchboard. In order to accommodate the operator's telephone, the cabinets are necessarily larger than those for the No. 1 Plug Board.

Cabinets

We furnish the cabinets in four sizes, and at the prices quoted below they are fully wired and jacked to ultimate capacity, with the necessary number of cord circuits installed, and operator's complete telephone.

10-Capacity Cabinet, with four cord circuits. Shipping weight, equipped, about 60 lbs. Price.. **\$23.10**

14-Capacity Cabinets, with five cord circuits. Shipping weight, equipped, about 66 lbs. Price.. **27.95**

20-Capacity Cabinets, with five cord circuits. Shipping weight, equipped, about 75 lbs. Price.. **32.46**

24-Capacity Cabinets, with six cord circuits. Shipping weight, equipped, about 80 lbs. Price.. **36.15**

The above prices for cabinets include cord circuits as stated and operator's complete telephone, but do not include ringers, repeating coils nor lightning arresters.

Indicating bell ringers, repeating coils and lightning arresters will be installed on these boards in the same manner and at the same prices as quoted for No. 1 Indicating Bell Plug Board. Before ordering one of these No. 2 Boards, read carefully what is said regarding ringers, repeating coils and lightning arresters in the description of the No. 1 Board.

If you have any trouble whatever in figuring the cost of your switchboard, write us, answering the questions on page 23, and we will be glad to tell you just what you need and the cost.

Example of Cost Complete

The entire cost of our No. 2 Indicating Bell Plug Switchboard is figured in the same manner as explained for the No. 1 Board, namely, by adding the cost of the desired number of ringers, repeating coils and lightning arresters to the cost of the cabinet, as quoted below. For example, take an exchange with sixteen country lines, eight of which are metallic system and eight grounded, ten equipped with 1,600-ohm telephones, four with 2,000-ohm telephones and two with 2,500-ohm telephones. For such an exchange the 20-capacity cabinet will meet all immediate requirements and

make reasonable provision for future growth. At the start the board for this exchange must be equipped with ten 1,600-ohm ringers, four 2,000-ohm ringers, two 2,500-ohm ringers, two repeating coils and twenty-four lightning arresters (two for each metallic line and one for each grounded line), making the total cost \$69.36, which is figured as follows:

One 20-Capacity Cabinet, with five cord circuits. Price.....	\$32.46
Ten 1,600-Ohm Indicating Ringers, at \$1.60 each.....	16.00
Four 2,000-Ohm Indicating Ringers, at \$1.90 each.....	7.60
Two 2,500-Ohm Indicating Ringers, at \$2.15 each.....	4.30
Two Repeating Coils, at \$2.70 each...	5.40
Twenty-four Lightning Arresters, at 15 cents each.....	3.60
Total Cost.....	\$69.36

Floor Cabinet Express Switchboard

No. 57H5708

This board is designed for either town or country exchanges where the number of lines is sufficient to justify the employment of an operator in constant attendance. It is a very convenient board for small town exchanges having a number of country party lines coming in on their switchboard. Each series or bridging line connecting into this board terminates in a spring jack and self restoring indicating drop.

The simplicity of construction and ease of access makes this board particularly desirable for exchanges where expert assistance is not always available. In the entire board there is not a screw nor a part that is not absolutely essential, and yet it contains everything necessary for good service.

It is just as easy to connect up the lines to one of these switchboards as it is to put in an ordinary telephone. The boards come completely wired, and easily understood instructions, together with blue prints, showing exactly how every incoming line is to be connected, are sent with the board. No experience in such work is necessary, as the simple instructions and blue prints make the installation very easy.

Cabinets

The cabinets are made from selected quarter sawed oak, with steel drop frame. The woodwork is finely finished and hand polished, presenting a very handsome appearance. They are made in various sizes, ranging from 25 to 300-line capacity, and can be arranged for any number of drops and key circuits.

The following prices are for the cabinets fully wired to ultimate capacity, with operators' sets as specified, and cable extending 10 feet from base of board:

25-Capacity Cabinet, with one operator's set.	Shpg. wt., 275 lbs.	Price. . . .	\$35.37
50-Capacity Cabinet, with one operator's set.	Shpg. wt., 300 lbs.	Price. . . .	39.60
100-Capacity Cabinet, with one operator's set.	Shpg. wt., 325 lbs.	Price. . . .	40.65
150-Capacity Cabinet, with one operator's set.	Shpg. wt., 450 lbs.	Price. . . .	48.00
200-Capacity Cabinet, with two operators' sets.	Shpg. wt., 600 lbs.	Price. . . .	70.00
250-Capacity Cabinet, with two operators' sets.	Shpg. wt., 725 lbs.	Price. . . .	77.00
300-Capacity Cabinet, with three operators' sets.	Shpg. wt., 900 lbs.	Price. . . .	99.75

Key circuits, drops, repeating coils and lightning arresters are not included at these prices, but will be installed, as explained on this and the following page.

Operators' Sets

An operator's set consists of transmitter, transmitter hanger, transmitter cord, watch case receiver, receiver cord, head band, receiver plug, receiver jack, induction coil, two cord racks, key cable, two cord weights, powerful five-magnet generator, generator rest, generator buzzer, night bell and night bell relay.

It is customary to equip boards of 150 capacity or less with one operator's set, those of 200 or 250 capacity with two operators' sets, and on larger boards one operator's set is usually installed for each 100 lines. The prices quoted above for the cabinets include the operator's sets.

Key Circuits

A key circuit consists of two cords, two plugs, one clearing out drop, one operator's combined ringing and listening-in key, with ring-back and two cord weights. The clearing out drop is mounted below the line drops and jacks, and is to signal the operator when a conversation is finished. The listening-in key enables the operator to "supervise" the conversation, that is, listen in to ascertain if proper service is secured. The ring-back key enables the operator to ring the calling subscriber without changing the plugs.

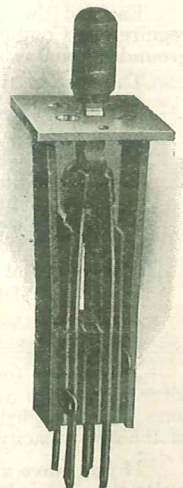
Our operator's keys are made with very few parts, the frames are stamped from one piece of heavy brass, and the extra strong and rigid springs are of high grade German silver, insulated with hard rubber strips.

One key circuit should be installed on the board for each ten lines entering the switchboard.

Key Circuits, installed on board. Price, each. **\$4.50**

The Most Important Parts of a Switchboard Are the Drops and Keys.

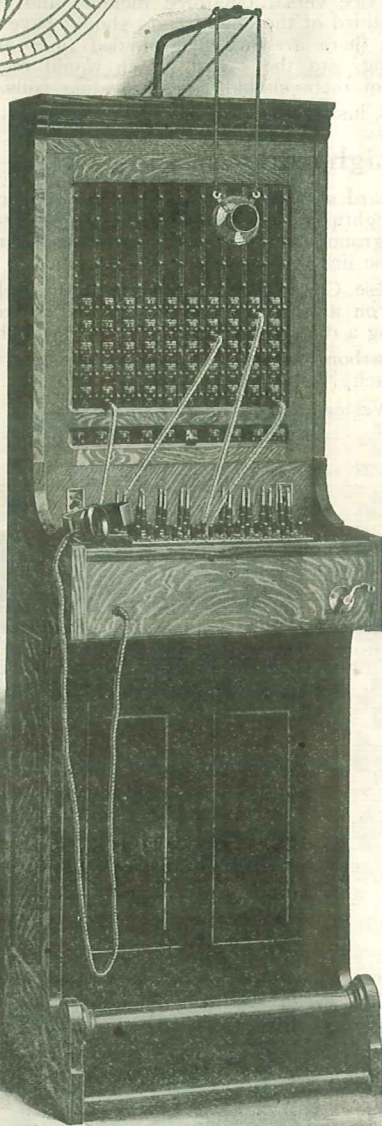
Note carefully the illustrations and descriptions of these parts as furnished with our boards.



Operator's Key.

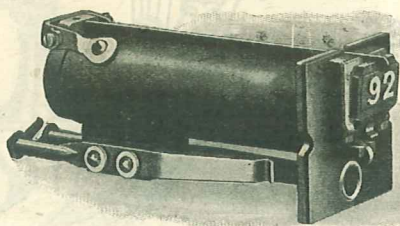


This Plug Is Used With All of Our Switchboards.



This Illustration Shows the 100-Capacity Cabinet With Fifty Drops Installed.

Self Restoring Drops



Self Restoring Drop.

We direct special attention to the superiority of our self restoring drops, which are of the tubular type, very strong and rigid and made with the fewest possible parts. When a subscriber signals Central, the numbered shutter on the front of the drop falls,

thus indicating which line is calling, and when the operator plugs in the shutter is automatically returned to its normal position, hence the name "self restoring." Each drop is a complete unit in itself and can be installed or removed at any time without interfering with the operation of any of the other drops on the board. There are many boards on the market in which the drops are installed in banks, making the installation of additional drops very difficult for anyone except an expert. Our drops are mounted on a steel frame instead of on the wood direct, which avoids another frequent source of trouble in many of our competitors' boards.

One drop must be put in for each series or bridging line coming into the board. The drops must correspond to the lines connected; that is, series drops must be installed for the series lines, and bridging drops for the country lines, and the bridging drops must be of the same ohms resistance as the phones on the connected lines.

We install Self Restoring Drops on the board at the following prices:

No. 57H5722 1/2	80-Ohm Series Drops.	Price, each.....	\$1.32
No. 57H5723 1/2	1,000-Ohm Bridging Drops.	Price, each.....	1.65
No. 57H5724 1/2	1,600-Ohm Bridging Drops.	Price, each.....	1.75
No. 57H5725 1/2	2,000-Ohm Bridging Drops.	Price, each.....	1.90
No. 57H5726 1/2	2,500-Ohm Bridging Drops.	Price, each.....	2.15

Shipping weights, any of the above, about 5 pounds.

Additional drops may be purchased at the above prices at any time as the exchange grows and are easily installed.

Example of Cost Complete

The entire cost of our Floor Cabinet Express Switchboard, complete ready for use, is figured by adding the cost of the desired number of drops, key circuits, repeating coils and lightning arresters to the cost of the cabinet.

Take, for example, an exchange in a small town having eighty subscribers in the town and thirty country lines coming in, twenty of the country lines grounded and ten metallic, one-half of them equipped with 1,600-ohm ringers and the other half with 2,000-ohm ringers.

For this exchange a 150-capacity board will be required with 110 drops installed.

A twenty-five capacity board with all drops installed requires three key circuits; a fifty-capacity board, five key circuits; a one hundred capacity board, ten key circuits, etc.

As twenty of the lines are grounded and ninety metallic, two of the twelve key circuits should have repeating coils wired in.

Each of the eighty series lines and each of the ten metallic country lines will require two Combination Carbon and Fuse Lightning Arresters and each of the twenty grounded country lines will require one arrester, making a total of 200 arresters.

The cost of the board complete is then figured as follows:

One 150-Capacity Cabinet with one operator's set.	
Price.....	\$ 48.00
Eighty 80-Ohm Series Drops, at \$1.32 each.....	105.60
Fifteen 1,600-Ohm Bridging Drops, at \$1.75 each.....	26.25
Fifteen 2,000-Ohm Bridging Drops, at \$1.90 each.....	28.50
Twelve Key Circuits, at \$4.50 each.....	54.00
Two Repeating Coils, at \$2.70 each.....	5.40
200 Combination Lightning Arresters, at 15 cents each.....	30.00

Total Cost.....\$297.75

This board for the exchange suggested above would provide for the addition of forty more lines as the exchange grows. If it seems probable that more than forty lines will be added later, it would be wise to put in the 200-capacity cabinet instead of the 150-capacity suggested in the above estimate.

If you have any trouble whatever in figuring the cost of your switchboard, write us, answering the questions on page 23, and we will be glad to tell you just what you need and the cost.

Repeating Coils

If part of the lines coming into the switchboard are metallic (two-wire) and part are grounded (one-wire) systems, so that it is often necessary to establish connection between grounded and metallic lines, a repeating coil should be wired into one or more of the key circuits. If half of the lines are metallic and half grounded, then half of the cord circuits should be equipped with repeating coils. If one-third of the lines are grounded and two-thirds metallic, or vice versa, one-third metallic and two-thirds grounded, then one-third of the key circuits should have repeating coils. Example, if there are fifteen grounded lines and thirty metallic lines coming into the board, which would require nine key circuits, three of them should have repeating coils.

Repeating Coils, installed on board. Price, each.....**\$2.70**

Lightning Arresters

Every switchboard should be equipped with our Combination Carbon and Fuse Lightning Arresters. One single arrester should be put in for each grounded line terminating in the board, and a pair for each metallic line terminating in the board.

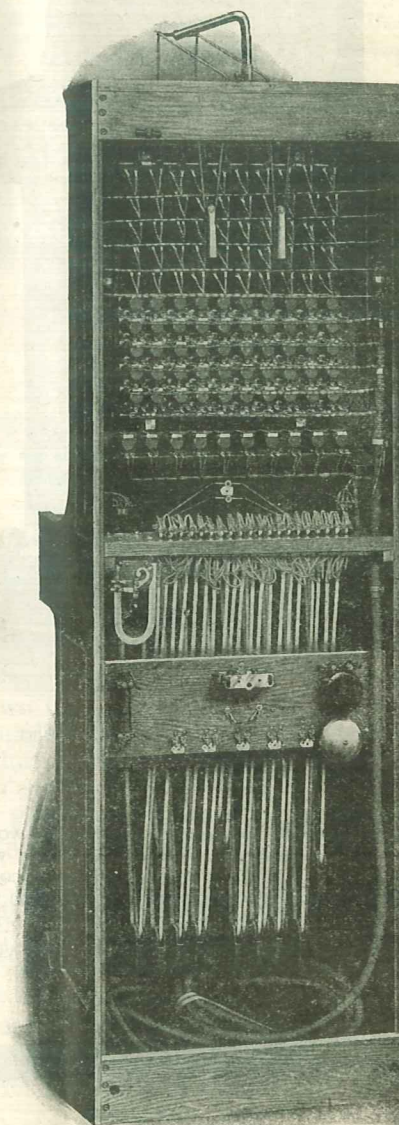
We furnish these Combination Carbon and Fuse Lightning Arresters mounted on a board, as shown in the illustration on page 25 thus forming a distributing frame for the switchboard.

Combination Carbon and Fuse Lightning Arresters, mounted on panel. Price, each.....**15c**

Extra Fuses, Western Union Style, copper tips.

Price, per 100**\$1.10**

Price, per dozen..**15c**



Express Switchboard, With Back Panel Removed to Show Interior Construction.

Line Materials—Tools—Wire

Single and Double Groove Pony Glass Insulators.
No. 57H5790 No. 9 for telephone, telegraph and fire alarm work. 400 in barrel. Weight, per barrel, 300 pounds. Price, 400 insulators...\$7.60
Price, each, less than barrel lots...2½¢

Glass Insulators.
No. 57H5999 No. 19. Deep groove double petticoat. Suitable for power and lighting line-work. Shipping wt., 1½ lbs.
Price, each...33¢
Price, per barrel of 200...\$7.25
Weight, 275 pounds.

Porcelain Tubes.
No. 57H5805 Inside diameter, ¾ inch; outside diameter, 1 inch; length, 6 inches. Used where wires are taken through a wall. Shipping weight, 2 pounds. Price, per dozen...15¢

Porcelain Insulators or Knobs.
No. 57H5800 No. 4½. 1-inch space between bottom and groove. Height, 1½ inches; diameter, 1½ inches; hole, ¾ inch; groove, ¾ inch.
Price, per 100 (Shipping weight, 27 pounds)...85¢
Price, per standard package of 1,000 (Shipping wt., 255 pounds)...\$7.25
Order a few more than actually required to allow for breakage in putting them up.

Porcelain Insulators or Knobs.
No. 57H5802 No. 5½. 1-inch space between bottom and groove. Height, 1½ inches; diameter, 1½ inches; hole, ¾ inch; groove, ¾ inch.
Price, per 100 (Shipping weight, 12 pounds)...50¢
Price, per standard package of 1,000 (Shipping wt., 95 pounds)...\$4.65
Order a few more than actually required to allow for breakage in putting them up.

No. 57H5808 For telephone and telegraph line construction. Can be fastened to side of pole or house. Painted. Weight, each, 8 ounces.
Price, per sack, containing 100 brackets (Shipping weight, about 50 pounds)...\$1.20
Price, each, in less than sack lots...02½¢

Pony Oak Pins.
No. 57H5811 For telephone and telegraph line construction. Size, 1½x8 inches. For use on crossarms. Painted. Weight, each, about 8 ounces.
Per sack, containing 250 pins (Shpg. wt., 62 lbs.)...\$1.75
Price, each, in less than sack lots...01½¢

Malleable Iron Brackets.
No. 57H5921 No. 57H5923 No. 57H5924
Insulator brackets made of malleable iron, are very rugged and will stand much abuse. These brackets are clean, well made malleable castings, japanned, and will be found very satisfactory.

No. 57H5921 Short Arm Wall Bracket. Size, 2½x6 in. Shpg. wt., 12 57H5925
No. 57H5922 oz. Price, per dozen, 75¢; each...80¢
No. 57H5922 Wall Bracket. Size, about 3½x6½ in. Shipping wt., 1 lb. Price, per doz., 95¢; each...1.00
No. 57H5923 Screw Bracket. Size, about 4½x6½ in. Shipping wt., 12 oz. Price, per doz., 95¢; each...1.00
No. 57H5924 Drive Bracket. Size, about 4½x7½ in. Shpg. wt., 12 oz. Price, per dozen, 95¢; each...1.00
No. 57H5925 Short Rod Bracket. Size, about 3½x3½ in. Shipping weight, 13 ounces.
Price, per doz., 65¢; each...7¢

Galvanized Brackets.
Galvanized Channel Iron Brackets, easy to install, substantial in construction and galvanized to meet weather conditions.
No. 57H5928 Single-Point Bracket. Length, 4½ in. Shipping weight, 12 ounces.
Price, each...\$0.12
Per dozen...1.20
No. 57H5928 Two-Point Bracket. Length, 12½ in. Shipping weight, 1½ pounds.
Price, each...\$0.30
Per dozen...2.88
No. 57H5930 Three-Point Bracket. Length, 17 in. Shipping weight, 2½ pounds.
Price, each...\$0.38
Per dozen...3.80

Oak Pole Steps.
No. 57H5814 Painted Oak Pole Step. Size, 1½x2½x7 inches. Weight, each, 8 ounces.
Price, per 100 steps (Shipping weight, about 50 pounds)...95¢
Price, each, in less than 100 lots...1½¢

Iron Pole Steps.
No. 57H5817 Hot Galvanized Iron Pole Step. Size, 1½x3 inches. Wt., each, 14 oz.
Price, per 100 steps (Shpg. wt., about 72 lbs.)...\$5.15
Price, each, in less than 100 lots...07¢

Turnbuckles.
These Turnbuckles are made of malleable iron heavily galvanized.
No. 57H5865 Turnbuckle with two eyes. Size, ½x6 inches. Shipping weight, about 3 lbs. Price...67¢
No. 57H5866 Turnbuckle with one hook and one eye. Size, ½x6 inches. Shipping wt., about 3 lbs. Price...65¢
No. 57H5867 Turnbuckle with two eyes. Size, ½x9 inches. Shipping weight, about 3½ lbs. Each...80¢
No. 57H5868 Turnbuckle with one hook and one eye. Size, ½x9 inches. Shipping wt., about 3½ lbs. Price...83¢
No. 57H5869 Turnbuckle with one hook and one eye. Size, ½x12 inches. Shpg. wt., about 3½ lbs. Each...\$1.05

Wire Rope Clips.
Malleable iron clips, heavily galvanized.
No. 57H5855 ¼ in. 19 lbs. 4c \$3.50
57H5856 ½ in. 21 lbs. 4c 3.50
57H5857 ¾ in. 28 lbs. 5½c 5.00

Linemen's Climbers. Don't Risk Your Life With Cheap Climbers.
No. 57H5945 Linemen's Climbers. Eastern pattern. We guarantee these climbers to be made of high grade steel, tempered, finely finished, strong and safe. We carry these climbers in standard lengths, namely, 15, 15½, 16, 16½, 17 and 17½ inches. State length. Shipping wt., 4 lbs.
Price, per pair, without straps...\$1.75

Linemen's Tool Belt.
No. 57H5953 Linemen's Tool Belt. Made of high grade bullhide. Width of strap, 2 inches. Length, 40 inches. Shipping weight, 1½ pounds. Price...\$1.95

Linemen's Safety Strap.
No. 57H5952 Linemen's Safety Strap, made of prime harness leather, single strap; 6 feet long, 1½ inches wide. Shipping weight, 2 pounds. Price...\$2.00

Electricians' Insulated Screwdrivers.
Insulated handle and blade, and a revolving butt that turns with the palm of the hand. The insulation reduces the chances of short circuits. No danger of shocks on all ordinary voltages. ¾-inch cabinet blades.
No. 57H5919 Screwdriver with 3-inch blade. Shipping weight, about 6 ounces. Price...45¢
No. 57H5920 Screwdriver with 6-inch blade. Shipping weight, about 8 ounces. Price...50¢

Electricians' Knife.
No. 57H5917 Blade of high grade steel. Rosewood handle, brass lined. Blade is locked when open. Screwdriver blade has knife edge suitable for stripping insulated wire. Shipping weight, 5 ounces. Price...58¢

Ten-In-One Tool, 15 Cents.
No. 57H5934 Comprises ten separate tools all in one piece, namely, alligator wrench, bottle opener, rule, file, adjustable nut wrench, Presto-Lite key, wire peeler, screwdriver, tack and staple puller. Shpg. wt., 3 oz. Price 15¢

Staples.
No. 57H5780 Copper Plated Steel Staples. ½ inch, for putting up bell wire.
Price, per 1-pound package...17¢
No. 57H5781 Insulating Saddle Staples. ¾ inch (No. 3). Better than the common staples, because the saddle prevents short circuit in case insulation of wire is cut. Shpg. wt., 8 oz.
Price, per package of 100 staples...2¢

Friction Tape—"Rubber."
Friction Tape is used for covering splices. Forms a weather resisting and long wearing coating. High grade tape, ¾ inch wide.
No. 57H5786 Friction Tape, 8-ounce roll. Shipping weight, about 10 ounces. Price...17¢
No. 57H5787 Friction Tape, 4-ounce roll. Shipping weight, about 5 ounces. Price...12¢
No. 57H5788 Friction Tape, 2-ounce roll. Shipping weight, about 3 ounces. Price...7¢
Splicing Compound or "Rubber Tape," forms an excellent insulation. Should be used on lighting circuit work. Excellent for telephone work.
No. 57H5785 Splicing Compound or "Rubber Tape," 8-oz. roll. Shpg. wt., about 10 oz. Price...35¢
No. 57H5784 Splicing Compound or "Rubber Tape," 4-oz. roll. Shpg. wt., about 5 oz. Price...20¢

Boltless Guy Clamps.
Malleable iron. Can be applied after guy is drawn tight. Increased strain draws clamp tight. No special tools required. No. 1 for ¼ and ½-inch strand. No. 2 for ¾ and 1-inch strand.
No. 57H5863 No. 1 Guy Clamp. Price, each...\$0.08
Price, per 100 (Shipping wt., 75 lbs.)...7.00
No. 57H5864 No. 2 Guy Clamp. Price, each...10¢
Price, per 100 (Shipping wt., 100 lbs.)...9.00

Wire Rope Clamps.
Rolled steel guy clamps, galvanized.
No. 57H5860 Two-Bolt Clamp, 3 inches long. Weight, about 1½ pounds.
Price, per standard package of 150 clamps (Shipping weight, about 165 lbs.)...\$21.00
Price, each, less than 150 lots...15¢
No. 57H5862 Three-Bolt Clamp, 4 inches long. Weight, about 1½ pounds.
Price, per standard package of 150 clamps (Shipping weight, about 225 pounds)...\$27.50
Price, each, less than 150 lots...20¢
No. 57H5862 Three-Bolt Clamp, 4 inches long. American Telegraph Standard. Weight, about 2½ lbs.
Price, per 100 clamps (Shipping weight, about 210 lbs.)...\$22.50
Each, less than 100 lots...24¢

Ground Rod.
No. 57H5765 Iron Ground Rod, 6 feet long, ½-inch in diameter. Galvanized. Shpg. wt., 3½ lbs. Price, each...\$0.32
Per dozen...3.25

Iron Guy Rod.
No. 57H5871 Iron Guy Rod, 6 feet long, ½ inch in diameter. Galvanized; with square nut and one square washer. Shipping wt., 6½ lbs. Per dozen, \$6.30; each...57¢

Thimbles.
Galvanized wire rope thimbles for forming eyes.
No. 57H5850 ¼ in. 7 lbs. 3½c \$2.65
57H5851 ½ in. 9 lbs. 3½c 2.95
57H5852 ¾ in. 11 lbs. 4c 3.20

Baby Knife Switches.
Porcelain base telephone, telegraph and battery switches, with return bend, self adjusting, smooth acting clips. Furnished only in 15-ampere size for 125 volts or less.
No. 57H5770 Single Pole Single Throw Switch. Base, 1½x3½x¾ inches. Shipping weight, 6 ounces. Price...19¢
No. 57H5771 Single Pole Double Throw Switch. Base, 1½x4x¾ inches. Shipping wt., 12 oz. Price...25¢

No. 57H5772 Double Pole Single Throw Switch. Base, 2½x3½x¾ in. Shipping wt., 12 oz. Price...30¢
No. 57H5773 Double Pole Double Throw Switch. Size, 2½x4x¾ inches. Shipping wt., 1 lb. Price...40¢

Wire Prices.
We cannot guarantee the prices of wire on this page. Should the market prices go higher we will be obliged to charge you the advance in price; should there be a decline in the market prices, we will give you the benefit, returning to you the difference in price.

Rubber Covered Wire. New Code Single Braid.
Solid copper conductor, rubber covered and with single braid. Suitable for open wiring on cleats, knobs and for molding or loom work.

No. 57H7954 No. 12-gauge. Price, per foot...\$ 0.02
Per 100 feet..(Shipping wt., about 4½ lbs.)...1.75
Per 1,000 feet..(Shipping wt., about 45 lbs.)...16.50
No. 57H7953 No. 10-gauge. Price, per foot...0.02½
Per 100 feet..(Shipping wt., about 5½ lbs.)...2.01
Per 1,000 feet..(Shipping wt., about 60 lbs.)...22.50
No. 57H7952 No. 8-gauge. Price, per foot...0.04
Per 100 feet..(Shipping wt., about 8½ lbs.)...3.70
Per 1,000 feet..(Shipping wt., about 83½ lbs.)...34.40
No. 57H7951½ No. 6-gauge. Price, per foot...0.06½
Per 100 feet..(Shipping wt., about 14 lbs.)...5.75
Per 1,000 feet..(Shipping wt., about 133 lbs.)...55.35
No. 57H7950½ No. 4-gauge. Price, per foot...0.09½
Per 100 feet..(Shipping wt., about 20 lbs.)...8.30
Per 1,000 feet..(Shipping wt., about 194 lbs.)...79.70

Triple Braid Weatherproof Wire.
Covered with three saturated braids. To be used for outside work only. Not suitable for inside work. Made to meet weather conditions better than rubber covered.

No. 57H7975 No. 14-gauge. Price, per foot...\$ 0.01½
Per 100 feet..(Shipping wt., about 3 lbs.)...1.15
Per 1,000 feet..(Shipping wt., about 28 lbs.)...10.25
No. 57H7974 No. 12-gauge. Price, per foot...0.01¾
Per 100 feet..(Shipping wt., about 4 lbs.)...1.50
Per 1,000 feet..(Shipping wt., about 39 lbs.)...13.30
No. 57H7973 No. 10-gauge. Price, per foot...0.02½
Per 100 feet..(Shipping wt., about 6 lbs.)...2.20
Per 1,000 feet..(Shipping wt., about 58 lbs.)...20.20
No. 57H7972 No. 8-gauge. Price, per foot...0.03¾
Per 100 feet..(Shipping wt., about 8½ lbs.)...2.90
Per 1,000 feet..(Shipping wt., about 80 lbs.)...27.65
No. 57H7971½ No. 6-gauge. Price, per foot...0.05
Per 100 feet..(Shipping wt., about 12 lbs.)...4.30
Per 1,000 feet..(Shipping wt., about 117 lbs.)...41.30
No. 57H7970½ No. 4-gauge. Price, per foot...0.07¼
Per 100 feet..(Shipping wt., about 17 lbs.)...6.50
Per 1,000 feet..(Shipping wt., about 170 lbs.)...61.50

WIRE. Roebling's Telephone and Telegraph Wire.
Telephone and telegraph wire bearing the genuine Roebling seal. This wire has an extra heavy coating of zinc covering every part of the wire and protecting it against rust and corrosion. It will last longer, give better results and prove much cheaper in the end than any other telephone wire. Roebling's wire is sold only in coils of ½ mile each. We do not break these standard ½-mile coils.

No.	Size	Approx. Wt. Per ½-Mile	Approx. Wt. Per ¼-Mile
57H7913	No. 12 Steel	80 lbs.	\$5.85
57H7914	No. 14 Steel	50 lbs.	\$3.80
57H7915	No. 12 B. B. Iron	86 lbs.	6.55
57H7916	No. 14 B. B. Iron	50 lbs.	3.95

Rubber Covered Twisted Pair.
No. 57H7919 Rubber Covered Twisted Pair for outside telephone work. Each conductor consists of a No. 19 copper wire with heavy rubber insulation and saturated braid covering. Shpg. wt., per 100 feet, about 3½ lbs. Per 100 feet...\$1.00
No. 57H7920 Rubber Covered Twisted Pair for inside telephone work. Each conductor consists of a No. 19 copper wire with heavy rubber insulation and dry braid of yellow cotton. One wire marked with red for tracing. Shpg. wt., per 100 ft., abt. 3½ lbs. Per 100 ft...\$1.17

Weatherproof Telephone and Telegraph Wire.
The conductor used in this wire is double galvanized B. B. iron telephone and telegraph wire, with double braid weatherproofing. Sold only in ½-mile coils.

No.	Size	Approx. Wt. Per ½-Mile	Approx. Wt. Per ¼-Mile
57H7908	No. 12 Double Braid	113 lbs.	\$15.00
57H7909	No. 14 Double Braid	73 lbs.	11.00
57H7910	No. 16 Double Braid	50 lbs.	9.00

Single and Double Galvanized Guy Wire Strand.
Standard Steel Strand for telephone and telegraph guys, messenger wires, etc. We furnish this wire strand with single or double galvanizing as follows. Sold only in 300-foot coils.

No.	Galvanized, Diameter	Strength, Lbs.	Coil, Lbs.	Price, per 300 Ft. Coil
57H7980	¼-Inch Single	2,300	38	\$3.00
57H7981	½-Inch Single	3,800	65	4.00
57H7982	¾-Inch Single	5,000	90	5.50
57H7983	¾-Inch Double	2,300	38	3.00
57H7984	¾-Inch Double	3,800	65	4.80
57H7985	¾-Inch Double	5,000	90	6.56

Fulton Tinner's Snips.
Length of cut is actual and not measuring from bolt.

70c and Up.

Forged steel snip, laid full length of blades with cutlery steel. Fully guaranteed.

No. 9H59994

Length, in.	8 1/2	9 1/2	11 1/2	12 1/2	13 1/2
Length cut, in.	2	2 1/2	2 1/2	3	3 1/2
Weight, abt., lbs.	1 1/4	1 3/4	1 1/2	2	2 1/2
Price, each	70c	85c	\$1.10	\$1.20	\$1.40

Taper-Point Soldering Coppers.

42c and Up.

Solid copper with steel shanks. Without handles.

No. 9H59990

No.	1 1/2	2	3	4
Weight, about, lbs.	1 1/2	1	1 1/2	2
Price, single iron	42c	56c	84c	\$1.12

Wood Handles for Soldering Coppers.

No. 9H59992 With wire ferrules.

Weight, about 2 ounces.

Price, each.....2c

Wire Solder.

38c

A high grade wire solder for general use and which flows at minimum degree of heat. Comes in 1-pound bundles.

No. 9H36462 Wire Solder. Per lb. 38c

Tinner's "Half and Half" Solder.

56c

No. 9H36463 Contains fifty parts tin and fifty parts lead. Weight, about 1 1/4 lbs.

Price, per bar.....56c

Soldering Paste.

35c

No. 9H36464 A highly concentrated paste, put up conveniently for use in 1-pound cans.

Price, per can.....35c

Improved Tackle Block Wire Stretcher and Safety Hoist.

85c

Weight, about 5 lbs. Self locking at any point. Swivels at either end. Provided with steel grapples for stretching barbed wire, strand and woven wire fencing. Also complete safety rope hoist for ordinary use, with which one man can raise 500 pounds.

No. 9H58484 Price, complete with 16 feet of 3/8-inch manila rope.....85c

Neverslip Wire Grip.

23c

The more you pull the tighter it grips. When attached to a handspike it makes a splendid stretcher. Equipped with swivel. Weight, about 1 lb.

No. 9H58480 Price.....23c

\$1.10 Splicing Clamps.

No. 9H58404 Linemen's Splicing Clamps. Full polished; length, 10 1/4 inches, for Nos. 8, 10, 12 and 14 wire.

Wt., 1 1/4 lbs. Price, each.....\$1.10

\$1.30 Wire Splicing Clamps or Connectors.

Smooth jaws, full polished. Length, about 10 1/4 inches, for No. 6, 8, 10, 12, 14 iron wire, No. 4, 6, 8, 10, 12 copper wire and No. 8, 10, 12, 14 McIntyre Sleeves. Weight, about 1 1/4 pounds.

No. 9H58406 Price.....\$1.30

Fulton Klein Pattern Side Cutting Pliers.

Forged steel, carefully tempered, polished head. Give length.

No. 9H58428

Length, inches	6	7	8
Wt., about, lb.	1 1/2	1 1/4	1
Price, per pair	85c	\$1.00	\$1.25

50c Machinists' Ball Pein Hammers.

1 1/4-Lbs.

Forged steel, with handles. Weight includes handles. State weight.

No. 9H3132

Size No.	00	0	1	2	3	4
Weight, about, lbs.	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Price.....	45c	50c	55c	60c	65c	70c

Brick or Stone Drill.

Forged from steel. Length, about 12 inches. State size.

No. 9H39393

Diam.	3/8 in.	1/2 in.	5/8 in.	3/4 in.
Weight, About	4 oz.	6 oz.	8 oz.	1 lb.
Price	30c	35c	40c	45c

16c Fulton Cold Chisels.

5/8-In.

Forged from tough steel, carefully tempered. Size given is size of steel bar from which chisel is made. State size.

No. 9H58310

Size, 5/8-in.	10	12	15	18
Wt., about 10 ounces.	10	12	15	18
Price	12c	16c	20c	

Fulton Square Shank Screwdriver.

35c 6-In.

Blade and shank of one piece of steel which extends through the handle, giving great strength and ability to stand hard service. Square shank makes it possible to use a wrench on heavy work. State length wanted.

No. 9H58806

Length, blade, inches	2 1/2	4	6	8	10
Weight, about, ounces	2	4	7	10	12
Price.....	15c	25c	35c	45c	55c

Champion Pattern Screwdriver.

14c 5-In.

A good quality screwdriver at a moderate price. Guaranteed to give good honest service. Forged steel blade and hardwood handle. Give length of blade wanted.

No. 9H58820

Length, inches	3	4	5	6	8	10
Weight, about, ounces	2	3	4	5	8	12
Price.....	10c	12c	14c	16c	18c	20c

Wrecking Bars.

35c 24-In.

Hand forged from tool steel. 12-inch size forged from 1/2-in. stock; 24 and 30-inch size forged from 3/4-inch stock. State length.

No. 9H58380

Length, about 12 inches	Shipping weight, about 12 ounces	Price, each.....25c
Length, about 24 inches	Shipping weight, about 3 1/2 pounds	Price, each.....35c
Length, about 30 inches	Shipping weight, about 4 pounds	Price, each.....40c

Sure Grip Hack Saw Outfit.

\$1.45

Complete With 12 Blades.

Extra high quality hack saw. Well made and guaranteed to stand hard usage. Frame is adjustable. Grip fits the hand; gives firm, sure hold on the saw. Furnished complete with 12 blades, 4 each, 8-in., 10-in. and 12-in. Blades are adjustable to right angles with frame.

No. 9H5208 Price.....\$1.45 (Weight, about 2 pounds.)

Fulton Guaranteed Files.

Made of crucible steel, hardened and tempered by a superior process. Cut fast, last a long time, wear well and will give excellent satisfaction. You get more real value for your money when you buy a Fulton file than when you buy any other kind. Thousands of mill men, machinists and professional filers will use no other. Be sure to give length.

The Kind That Cuts.

Fulton Mill Files the Kind to Buy.

No. 9H58620

Size, inches	6	8	10	12	14	16
Weight, each, about, pounds	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Price, each.....	9c	11c	14c	20c	27c	36c

Fulton Round Bastard or Rat Tail Files.

No. 9H58634

Size, inches	4	5	6	8	10	12
Wt., each, abt., oz.	1	1	2	4	4	8
Price, each.....	8c	9c	10c	12c	15c	19c

Positive Grip File Handles.

6c and Up.

Cannot split or pull away from file. File cannot turn in handle. Steel ferrule, which also forms a cap over end of handle, is slotted to receive the file and is rigidly fastened to wood handle. Will outwear a great many common handles.

No. 9H58597

For Size File	Weight, about 2 ounces	Price.....6c
No. 1, 3 to 4 inch	Weight, about 4 ounces	Price.....7c
No. 2, 5 to 6 inch	Weight, about 4 ounces	Price.....8c
No. 3, 7 to 8 inch	Weight, about 4 ounces	Price.....8c
No. 4, 10 to 12 in.	Weight, about 6 ounces	Price.....9c
No. 5, 14 to 16 in.	Weight, about 6 ounces	Price.....10c

Fulton Side Cutting Pliers.

Forged steel with polished jaws and raised cutters. Give length.

No. 9H58418

Length, inches	5	6	7	8
Wt., abt., oz.	4	6	8	12
Price, pair.....	55c	70c	80c	90c

Sure Grip Wrenches.

70c and Up

A modern pattern screw wrench with large nut threaded directly on the bar of wrench, giving great pressure on the jaws. A type of wrench preferred by many good mechanics. State size wanted.

No. 9H3334

Size, inches	8	10	12	15	18
Opens, about, in.	1 1/2	1 3/4	2 1/4	2 3/4	4
Weight, about, lbs.	1 1/4	1 1/2	2 1/4	3 1/4	6
Price.....	70c	85c	\$1.05	\$1.35	\$1.90

Fulton Nail Cutting Compass Saw.

60c

Tempered steel; cuts wood, nails, sheet metal, etc. May be filed when dull, requires no setting. Selected handle, two screws. Length, 12 inches. Weight, about 5 oz.

No. 9H59051 Price.....60c

Solid Forged Steel Chisels.

20c 1/2-INCH.

Oil tempered. Blade polished, handle black. Will stand rough usage. State length.

No. 9H58375

Size, cutting edge, inches	1/2	3/4	1	1 1/4
Wt., abt., lbs.	1/4	3/8	1/2	3/4
Price, each.....	20c	25c	30c	40c

Zigzag Spring Joint Rules.

No. 9H57561

Yellow finish with black markings. Metal tips. Width, 3/8 inch.

Length, feet	2	3	4	5	6	8
Wt., about, oz.	2	3	4	5	6	8
Price.....	18c	23c	29c	36c	44c	

14-Piece Handy Kit.

\$2.95

No. 9H5402 This outfit of high grade tools for \$2.95. Every article included is of good quality and fully warranted. Set contains:

- Mechanist's 1-Pound Hammer.
- Combination Pliers, Wire Cutter and Screwdriver, 6 inches.
- Button Pattern Pliers, 8 inches.
- Flat Mill File, 8 inches.
- Wood File Handle, with ferrule.
- Screw Wrench, 9 inches; opens 2 inches.
- Pipe Wrench, 8 inches; opens 1 inch.
- Screwdriver, 5-inch.
- 2 Engineers' Forged Steel Wrenches, with 1/2 and 9-16-inch and 3/4 and 5/8-inch openings.
- Forged Steel Cold Chisel, 5/8-inch cut.
- Round Punch, forged steel, 5/8 inches.
- One-Quarter Pound Spool of Copper Wire.
- Three Dozen Assorted Cotter Pins.

Fourteen high grade articles, all in well made canvas roll with straps. Weight, about 7 pounds.

Price, complete.....\$2.95

Combination Pliers.

Combination Gas, Wire and Side Cutting Pliers. Forged steel, polished jaws. Screwdriver on one handle, reamer on other. Give length.

No. 9H58454

Length, inches	6	8
Weight, about, oz.	8	12
Price.....	55c	75c

Long Chain Nose Lap Joint Side Cutting Pliers.

Forged steel, with polished jaws. Guaranteed. Length, 5 1/2 in. Weight, about 4 oz.

No. 9H58434 Price.....65c

Fulton Special Hand Honed, Leather Tipped, Bevel Edge Socket Firmer Chisels

HIGH QUALITY.



POLISHED FINISH.

No. 9H58102 High grade carefully finished chisels. Blades are crucible cast steel, carefully tempered, ground and honed by hand. Sockets are long, well made and will not split. Handles are made of selected white hickory, tipped with leather. Fulton Special Chisels are guaranteed to give entire satisfaction. Be sure to state size wanted.

Size, 1/4 inch.	Size, 1/2 inch.	Size, 3/4 inch.	Size, 1 inch.	Size, 1 1/4 inches.	Size, 1 1/2 inches.	Size, 2 inches.
Wt., about 4 ounces.	Wt., about 5 ounces.	Wt., about 6 ounces.	Wt., about 7 ounces.	Wt., about 8 ounces.	Wt., about 11 ounces.	Wt., about 1 1/4 pounds.
Price, 35c	Price, 38c	Price, 41c	Price, 44c	Price, 48c	Price, 52c	Price, 80c

FULTON HAND SAWS.

Standard grade. Made of good grade saw steel ground four gauges thinner on the back than on the tooth edge. When ordering mention length and points wanted.



No. 9H59020 Skew Back Hand Saw.	Weight, About	Price, Each
No. 9H59021 Straight Back Hand Saw.	1 1/4 lbs.	\$1.40
Length, 24 inches—7, 8, 9 or 10 points to the inch	2 lbs.	1.55
Length, 26 inches—6, 7, 8, 9, 10 or 12 points to the inch	2 1/2 lbs.	1.70
Length, 28 inches—7 or 8 points to the inch		

The Improved Fulton Special Ratchet Bit Brace

Frictionless roller bearings. Heavily nickel plated and nicely finished throughout.

SWEEP—High grade steel, 15-32 inch in diameter.

HEAD—Polished cocobolo, steel clad to protect it from being split or bruised. It is attached to the sweep by means of a steel quill that revolves on roller bearings.

HANDLE—Cocobolo, with brass bushings inserted in the end to prevent it from splitting. Revolves on patent adjustable tapered steel collars and bearings. By means of set screws any looseness from wear may be instantly taken up.

RATCHET—Simple in construction, easily operated, strong and durable. The ratchet teeth are cut on the end of the steel body that revolves in the socket attached to the sweep and are concealed and protected by this socket.

SLEEVE—Made of malleable iron, has knurled grip. Nickel plated.

CHUCK—Has forged steel jaws. Takes regular square shank bits up to 3/8 inch in diameter. Will take a large size expansive bit.

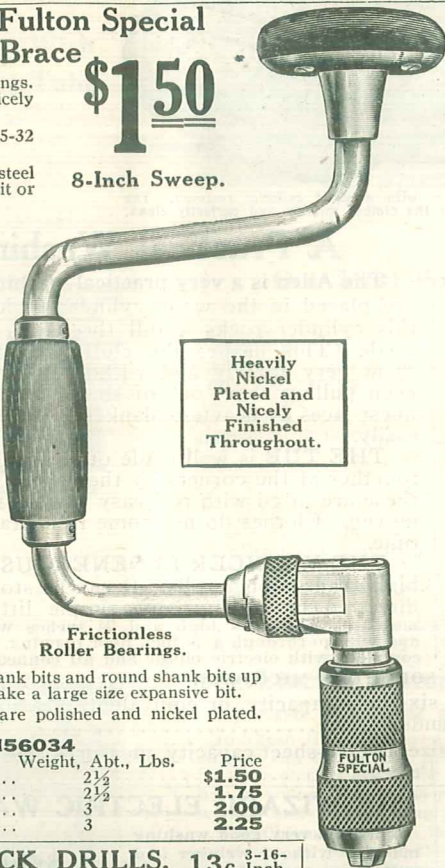
FINISH—All metal parts are polished and nickel plated. State size.

\$1.50

8-Inch Sweep.

Heavily Nickel Plated and Nicely Finished Throughout.

Frictionless Roller Bearings.



9c 1/8-Inch. BIT STOCK DRILLS. 13c 3-16-Inch.

These drills fit any bit brace and will drill steel, iron or other metals. Will bore any kind of wood without splitting and are not injured by contact with screws or nails. Carefully made by skilled workmen, only first quality material being used. All drills are ground to micrometer gauge and sizes are exact. All of our drills 3-32-inch and larger have solid steel forged shanks, thereby giving increased strength. Points of drills should be kept well oiled when drilling metal. State size wanted. No. 9H56720

Size, inch.	1-16	3-32	1/8	5-32	3-16	7-32	1/2	9-32	5-16	11-32
Weight, about, oz.	1	1	1	2	2	2	2	2	4	4
Price, each	5c	7c	9c	11c	13c	15c	17c	19c	22c	25c
Size, inch.	1/8	13-32	7-16	15-32	1/2	5/8	3/4	7/8	1	1 1/4
Weight, about, oz.	4	4	4	6	6	10	10	14	14	14
Price, each	28c	31c	34c	37c	42c	56c	70c	84c	98c	

55c

1/2-IN.

FULTON SOLID CENTER LONG SHANK AUGER BITS

WITH 12-INCH TWIST FOR DEEP AND HEAVY BORING.



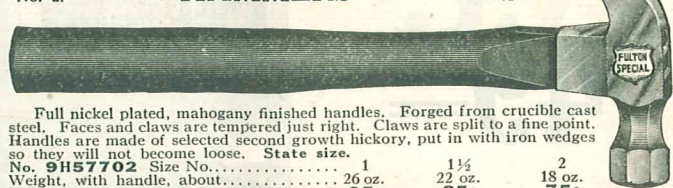
Will bore a clean smooth hole in either soft or hard wood. Used extensively by electricians and others for boring deep holes that cannot otherwise be reached with a regular length auger bit. State size.

Size, inch.	1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2
Weight, about, ounces	4	5	6	8	10	12	14	16	18
No. 9H56382 Price, each	45c	55c	65c	75c	85c	95c			

75c FULTON SPECIAL NAIL 85c HAMMERS

No. 2.

No. 1 1/2.



Full nickel plated, mahogany finished handles. Forged from crucible cast steel. Faces and claws are tempered just right. Claws are split to a fine point. Handles are made of selected second growth hickory, put in with iron wedges so they will not become loose. State size.

No. 9H57702 Size No.	1	1 1/2	2
Wt., about 12 ounces.	26 oz.	22 oz.	18 oz.
Price, with handle, about	95c	85c	75c

STRAIGHT SHANK TWIST DRILLS.

Cannot be used in the ordinary bit brace. Must be used in a chuck made for round shank drills. The shank and twist are the same size. Carefully made of high quality material. We guarantee the quality equal to any made.

No. 9H56760 Straight Shank Twist Drills. State size wanted.

Diam. in 64ths	4	5	6	7	8	9	10	11	12	13
Length, inches	2 1/2	2 3/4	2 3/4	2 3/4	3	3 1/4	3 1/4	3 1/4	3 1/4	3 3/4
Price, each	4c	5c	6c	7c	8c	9c	10c	11c	12c	13c
Diam. in 64ths	14	15	16	17	18	19	20	21	22	23
Length, inches	3 3/4	3 3/4	4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4	4 1/4	4 3/4
Price, each	14c	15c	16c	17c	18c	19c	20c	21c	22c	23c
Diam. in 64ths	24	25	26	27	28	29	30	31	32	
Length, inches	5	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	5 1/4	6
Price, each	24c	25c	26c	27c	28c	29c	30c	31c	32c	

Chucks with 1/2-inch shanks to take above straight drills are shown in our big General Catalog.

Reamers for Wood or Iron. 30c and up. Made of high grade tempered tool steel. To be used in bit brace. State size.

No. 9H3600	
Size, inch.	1/4 5-16 3/8 7-16 1/2 9-16 5/8 11-16 3/4
Weight, about, oz.	1 1 1 2 3 4 4 4 6 8
Price	30c 33c 36c 40c 45c 50c 58c 65c 75c

54c Taper Reamer for Wood or Iron.

Made of high grade tool steel. Will ream holes from 1/8 to 1/2 inch. Does the work of six ordinary reamers. Weight, about 2 oz.

No. 9H3602 Price.....54c

Extension Bit Holder. 90c 12-In.

For boring deep holes or in any place that cannot be reached with an ordinary bit. Will follow into a hole 1/2 inch or larger. State size.

No. 9H56348	
Length, inches	12 18 24
Weight, about, oz.	10 12 16
Price	90c \$1.10 \$1.35

Rosehead Countersink Bit. 19c

High grade, for metal. Made of tool steel, properly tempered. Countersinks holes up to 3/4 inch. Weight, about 3 ounces.

No. 9H56524 Price.....19c

Angular Boring Attachment. \$1.70



For boring in corners, etc. Fits any brace, adjustable to any necessary angle. Equipped with master chuck which takes straight shank, taper and bit stock drills. Weight, about 2 lbs.

No. 9H56356 Price.....\$1.70

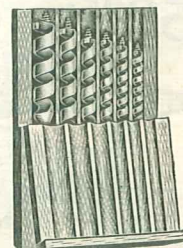
FULTON "ROUGH AND READY" BITS.

For Farmers, Millwrights, Linemen, Electricians, Etc.

This bit is left entirely black and has no spurs. Particularly designed for hard, rough work. Is a rapid borer and will bore in all kinds of hardwood, with or across the grain. It will bore lignum vitae, having no spurs to break off, and will stand all kinds of hard usage.

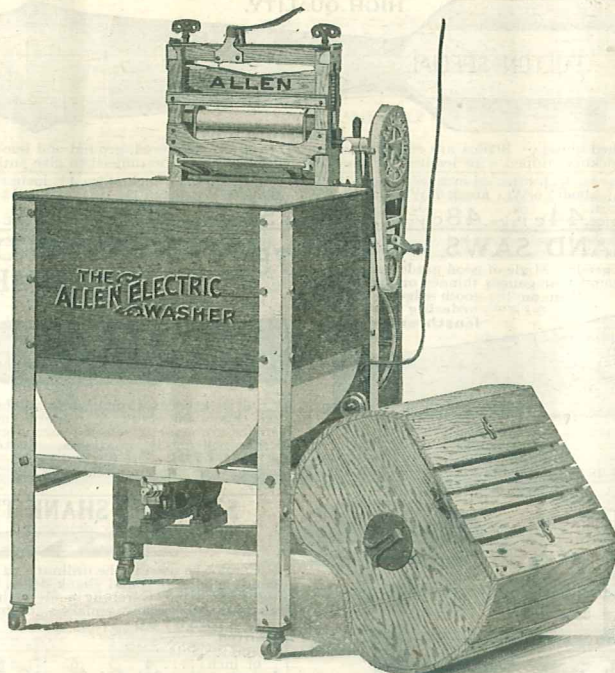
No. 9H56242 Set of six, one each, 1/4, 3/8, 1/2, 5/8, 3/4 and 1 inch, in nicely finished hardwood case. Weight, about 2 1/4 pounds. Price, per set.....\$2.25

No. 9H56243 Fulton "Rough and Ready" Bits.	
State size.	
Size, inch.	1/4 3/8 1/2 5/8 3/4 1
Weight, about, oz.	1 2 3 4 5 8
Price, each	25c 28c 33c 40c 48c 56c



75c 3/4-IN.

THE ALLEN ELECTRIC WASHER



FAMILY SIZE

\$49²⁵

EXTRA LARGE SIZE

\$89⁹⁵

Showing the Allen Electric Washer with washing cylinder removed. The peculiar shape of the cylinder washes the clothes quickly and perfectly clean.

A Successful Washing Machine

The Allen Electric Washing Machine is one of the very latest types of electric machines and has met with wonderful success wherever it has been sold. It has been sold under another name in various parts of the country by special salesmen and by the power companies at prices ranging from \$65.00 to \$80.00 for the family size, six-sheet capacity machine. By our method of selling we are able to offer it at a big reduction and at the same time under our usual guarantee of satisfaction or money returned. In other words, you can order an Allen Electric Washing Machine and use it for thirty days in your own home. If for any reason you are dissatisfied or would rather have your money than the machine you can send it back to us and we will return the purchase price together with any freight or drayage charges you paid.

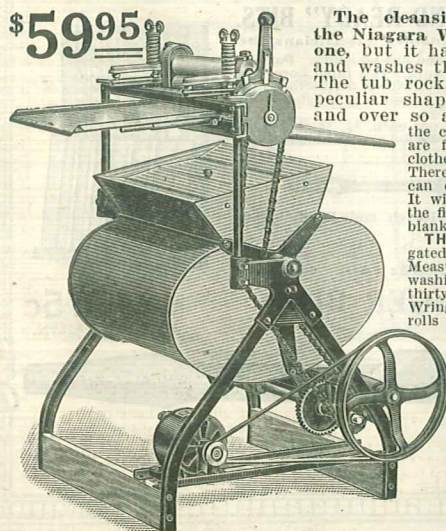
Shipped from factory in SOUTHERN MICHIGAN.

No. 44H75331 Allen Electric Washing Machine, family size, six-sheet capacity, or equivalent, measures 26 inches long, complete with 11-inch wringer. Shipping weight, 225 pounds. Price..... **\$49.25**

No. 44H75341 Allen Electric Washing Machine, extra large size, twelve-sheet capacity, measures 36½ inches long, complete with 12-inch wringer. Shipping weight, 300 pounds. Price..... **89.95**

THE NIAGARA ELECTRIC WASHING MACHINE

\$59⁹⁵



The cleansing principle involved in the Niagara Washing Machine is a new one, but it has proven to be very easy and washes the clothes perfectly clean. The tub rocks back and forth and its peculiar shape turns the clothes over and over so all parts are subjected to the cleansing currents of water which are forced through and through the clothes at every rock of the tub. There is absolutely nothing which can catch, tear or wear the clothes. It will wash anything washable from the finest lace curtains to the heaviest blankets or overalls.

THE TUB is made of heavy corrugated copper, heavily retinned inside. Measures 23x18¼x19 inches and has washing capacity of six sheets or thirty-five average mixed pieces. Wringer has high grade white rubber rolls and can be started, stopped or reversed by a simple movement of a small lever. Removable and adjustable trays are provided to conduct clothes in either direction from the wringer.

Handsomely finished in white enamel with polished copper tub and trays. Shipping weight, 165 lbs. Shipped from factory in NORTHEASTERN ILLINOIS.

No. 44H75621 Niagara Electric Washing and Wringer Machine. Price..... **\$59.95**

THE WIZARD ELECTRIC WASHING MACHINE

\$27⁹⁵



This is a very good washing machine without wringer and will give you perfect service. However, we advise you to buy a machine with electrically driven wringer and thus eliminate all the hard work in connection with the washing of clothes. Space for hand operated wringer is provided on this machine but an electrically driven wringer cannot be applied later. Washing is accomplished by the well known dolly movement. Dolly rotates three-quarter revolution and reverses. Has well finished tub, measuring 22¾ inches in diameter, and 12 inches deep, inside measurements, mounted on substantial cross braced legs. Gearing is extra heavy for power work and machine is fully guaranteed. Shipping weight, 140 pounds. Shipped from factory in NORTHEASTERN ILLINOIS.

No. 44H75321 Wizard Electric Washing Machine. Price..... **\$27.95**

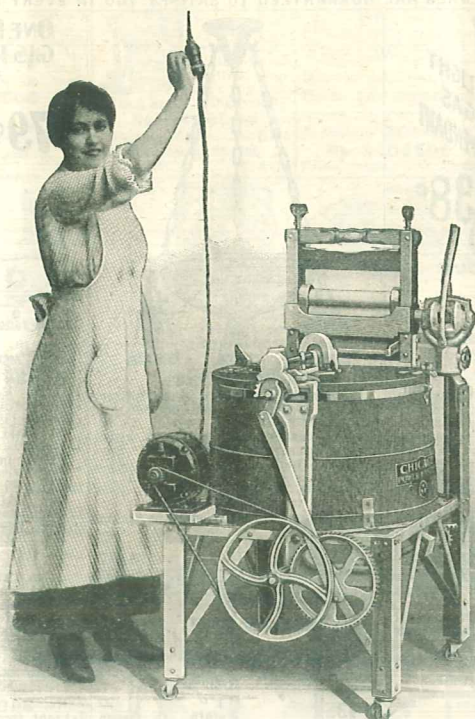
THE CHICAGO ELECTRIC WASHER

STARTS AS EASILY
AS TURNING ON AN
ELECTRIC LIGHT

\$39⁹⁵

The Machine to Use With
Stationary Laundry Tubs

Conveniently Used With
Ordinary Tubs and
Bench.



Our Most Popular Machine.

Has the time proven rotary dolly type washing movement and the latest type swinging reversible wringer.

NOTICE THE CONSTRUCTION: A heavy solid steel stand which carries the tub and all mechanism, a high grade tub, measuring 22 $\frac{3}{4}$ x12 inches inside, made of lumber that is especially adapted for washing machine use, and a high grade wringer that can be stopped or started in either direction by a simple lever movement and swung to any position as illustrated. Machine occupies a floor space less than 2 feet square, yet it will do all that any of the big cumbersome platform machines will do. If you have stationary tubs, it is just the machine you want. If you use ordinary tubs, it is just as convenient and your separate tubs can be set on any bench you have or on our separate steel tub bench, which is very handy.

Notice how conveniently the clothes are wrung from the washing machine tub into the rinse water. Simply raise the lid to stop the washing mechanism.

The Electric Motor Can Operate Washer and Wringer at the Same Time.

In these illustrations we show how another batch of clothes can be washed in the machine at the same time that the clothes are being wrung through the electrically driven wringer from the rinse water into the blue water. A time and labor saving feature.

The Chicago Electric Washer is a strong and durable machine, all parts of the mechanism being built much heavier than it has been customary to make these parts.

The last operation of wringing the clothes out of the blue water into the basket can be accomplished and another batch of clothes can be washing at the same time, if necessary. There is no waiting when you use a Chicago Electric Washer, as the washer and wringer can be operated together or separately, just as desired.

Price List.

The Chicago Electric Washing and Wringing Machine is furnished complete with wringer and electric motor, with connections consisting of connecting rod and attachment plug all ready for use. Price does not include the extra tubs and extra steel tub bench illustrated. Shipping weight, 235 pounds. Shipped from factory in NORTHEASTERN ILLINOIS.

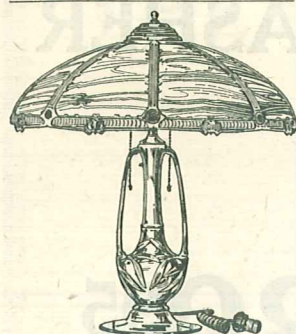
No. 44H75551 Chicago Electric Washing and Wringing Machine. Price.....**\$39.95**

No. 44H75441 Extra Steel Tub Bench. Shipping weight, 25 pounds. Price.....**\$1.83**



Let us have your order for one or more of the brackets, chandeliers and showers listed on this page and ask us to include with your order a copy of our latest Electric, Gas and Combination Fixture Catalog. There are over 350 fixtures listed in it, and many more bargains just as good and just as cheap as the fixtures listed on this page.

OUR FIXTURES ARE GUARANTEED TO SATISFY YOU IN EVERY RESPECT.



No. 34D8108 Metal Overlaidd Portable. Height, 22½ inches. Flemish brass finish. Eight-panel 19½-inch metal overlaidd shade with amber color art glass. Two chain pull sockets, silk cord and plug.
Price.....\$18.15



No. 34D5574½ Four-Light Electric Fixture. Length, 36 inches. Spread, 15 inches. Genuine brass in antique gold finish. Ceiling canopy, 5½ inches in diameter. The chain supports a round body, 13 inches in diameter and 10 inches in length. Ornamental grape design casting at top and cast knob at bottom. Four beautifully chased leaf design flat strap arms, supporting 2½-inch fancy socket covers and keyless sockets for electric lights. Wired with silk cord and keyless sockets. Frosted glass satin finish bowl shape semi-indirect shades.
Price, complete.....\$23.25



No. 34D7018 One-Light Electric Ceiling Light. Length, 7¼ inches. Iron ceiling band in dead black finish with 3¼-inch fitter. 6-inch C. R. I. ribbed glass ball outlined with black in Mission style. Complete with porcelain keyless socket. Weight, 2 pounds. Price.....\$1.05



SQUARE MISSION GLASS ART DOME ELECTRIC \$5.85
Length, 60 inches. 16-inch square Mission style dome made of brass, dead black finish, fitted with four panels of amber art glass and 2½-inch curtain fitted with four panels of green art glass and 4-inch green bead fringe. Wrought iron chain and embossed canopy in black finish.
No. 34D8560 Wired complete, price.....\$5.85
No. 34D8561 Same dome, but equipped for gas with brass stem instead of chain, finished dead black and with complete gas light.
Price, complete.....\$5.85



One Light Electric Pendant BARE NO GLASS \$1.25
ONE LIGHT GAS PENDANT \$1.39
2 LIGHT POLISHED BRASS 36 INCH GAS PENDANT \$38c
No. 34D1200 Gas Pendant. 1-Light Polished Solid Brass, 30 inches. Complete with pillar and tip...\$38c
No. 34D1201 Same as No. 34D1200; 36 inches long. Price, 45c
No. 34D1202 Gas Pendant. 2-Light Polished Brass, 36 in. Complete with pillars and tips. Price...\$1.39
No. 34D5200 Electric Pendant. 1-Light Solid Brass, 36 inches. Brush brass finish, 4½-inch ceiling canopy. Price, bare.....\$1.75c
Price, wired, complete with key socket and frosted glass shade...\$1.25

Gas and Electric Brackets.
Genuine Brass Rope Arm Gas Brackets. Gift Finish. Complete With Pillar and Tip.
No. 34D1000 1-Light Stiff Gas Bracket. Extends 5½ inches. Wt., 4 oz.
Price.....12c
No. 34D1001 1-Light Swing Gas Bracket. Extends 9½ in. Wt., 6 oz.
Price.....23c
No. 34D1002 1-Light Double Swing Gas Bracket. Extends 18½ in. Wt., 10 oz. Price.....42c



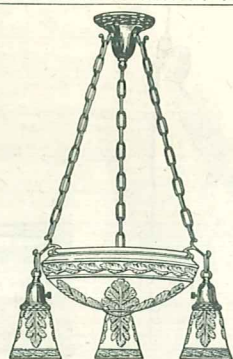
No. 34D1012 1-Light Gas Bracket. Solid brass, polished finish, 3-inch wall plate. Extends 9½ in. Wt., 10 oz.
Price, bare.....37c
With star glass shade. Wt., 2½ lbs. Price.....59c



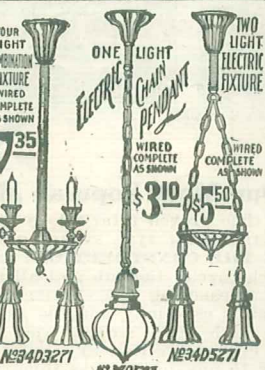
No. 34D3008 2-Light Combination Bracket. Polished brass. Extends 10 inches to end of electric shade. 4½-inch wall canopy. Wt., 1½ lbs. Price, bare.....60c
Price, wired complete, with wreath pattern crystal glass shade. Wt., 4½ lbs. Price.....\$1.55
No. 34D5000 1-Light Electric Bracket. Solid brass, polished finish, 4-inch wall canopy. Extends 5 inches. Wt., 1½ lbs. Price, bare.....29c
Price, wired, with crystal glass star shade. Wt., 2½ lbs. Price.....63c



SQUARE MISSION BRASS CHANDELIERS
4 LIGHT GAS FIXTURE. BARE NO GLASS \$570
4 LIGHT ELECTRIC FIXTURE \$515
COMPLETE AS SHOWN \$735
COMPLETE AS SHOWN \$695
Length, 36 inches. Spread, 18½ inches. Square stem, arms and body. Square frosted glass shades.
No. 34D1323 2-Light Gas Chandelier. Price, bare.....\$3.75
Price, complete with glass.....\$4.45
No. 34D1324 4-Light Gas Chandelier. Price, bare.....\$5.70
Price, complete with glass.....\$6.95
No. 34D5323 2-Light Electric Chandelier. Price, bare.....\$3.20
Price, wired with glass.....\$4.39
No. 34D5324 4-Light Electric Chandelier. Price, bare.....\$5.15
Price, wired with glass.....\$7.35
No. 34D3324 8-Light Combination Chandelier. Price, bare.....\$6.10
Price, wired, with four square candles and four glass shades.....\$9.35



No. 34D5636
Combining direct and semi-indirect lighting. Length to bottom of glassware, 34 inches. Spread, 18 in. The hanger is solid brass in brush (satin) brass and black finish. Embossed 6-inch ceiling canopy with three brass chains, supporting a 16-inch satin finished embossed glass bowl and three side shades. Completely wired for four electric lights, one inside of the bowl and three side lights.
Price, complete.....\$8.98



ONE LIGHT ELECTRIC PENDANT \$310
2 LIGHT COMBINATION PENDANT \$550
No. 34D3271 1-Light Combination Sheffield Fixture. Brush brass and black finish. Length, 36 inches. Reeded stem, gas candles, socket covers.
Price, wired, with glass.....\$7.35
No. 34D5277 1-Light Solid Brass Chain Electric Sheffield Fixture. Length, 36 inches; 3¼-inch socket cover.
Price, wired, complete with frosted glass ball.....\$3.10
No. 34D5271 2-Light Electric Chain Sheffield Fixture. Length, 36 inches; 2½-inch socket covers, 8-inch body.
Price, wired, complete with frosted glass shades.....\$5.50



RICHLY EMBOSSED EGG & DART CHANDELIERS
3 LIGHT GAS FIXTURE NO GLASS \$495
3 LIGHT ELECTRIC FIXTURE NOT WIRED NO GLASS \$430
COMPLETE AS SHOWN WIRED \$620
COMPLETE AS SHOWN \$595
Length, 36 inches. Spread, 19 inches. Richly embossed body and canopy. Fancy ornamented arms. Frosted fluted blown glass shades, floral wreath design.
No. 34D1354 3-Light Gas Chandelier. Price, bare.....\$4.95
Price, complete with glass.....\$5.95
No. 34D5354 3-Light Electric Chandelier. Price, bare.....\$4.30
Price, wired, with glass.....\$6.20
No. 34D3353 4-Light Combination Chandelier. Price, bare.....\$5.50
Price, wired, with glass.....\$7.75



ONE LIGHT GAS PENDANT \$79c
2 LIGHT COMBINATION PENDANT \$130
ONE LIGHT ELECTRIC PENDANT BARE NO GLASS \$15
WIRE COMPLETE AS SHOWN \$55
No. 34D1203 Gas Pendant. 1-Light Polished Brass, 36 inches. Fancy ceiling canopy. Complete with crystal glass star shade. Price, 79c
No. 34D5202 Electric Pendant. 1-Light Brush Brass, 36 inches. Price, bare.....\$1.15
Price, wired, complete with key socket and frosted glass shade.....\$1.65
No. 34D3203 Pendant. 2-Light Combination, 36-Inch Polished Brass. Price, bare.....\$1.30
Price, wired, complete with crystal glass star shades.....\$2.19



No. 34D5014 1-Light Electric Bracket. Solid brass, brush (satin) finish. 4-inch wall canopy. Extends 6 in. Wt., 1½ lbs. Price, bare 40c
Price, wired with frosted thin blown glass shade. Weight, 2½ pounds.....83c
No. 34D1014 1-Light Gas Bracket. Solid brass, brush (satin) finish. 4-inch wall canopy. Turned fittings. Extends 9½ inches. Wt., 14 oz. Price, bare.....57c
Price, with frosted thin blown glass shade. Wt., 3 lbs. Price.....85c



ROUND SHEFFIELD BRACKETS.
Genuine brass in brush brass and black finish. Extends 5½ inches from wall; 6-inch round wall canopy.
No. 34D3070 Combination Bracket. Bare. Wt., 1½ lbs. Price.....\$1.45
Wired, complete with 2½-inch embossed Sheffield socket cover, round gas key and cast flambeau gas burner with lava tip. Price.....\$2.15
No. 34D1070 1-Light Gas Bracket. Bare. Wt., 1½ lbs. Price.....\$1.08
Complete with round gas key and cast flambeau gas burner with lava tip. Weight, 2 lbs. Price.....\$1.15
No. 34D5070 1-Light Electric Bracket. Bare. Wt., 1½ lbs. Price.....\$1.05
Wired, complete with frosted glass shade. Wt., 3 lbs. Price.....\$1.59



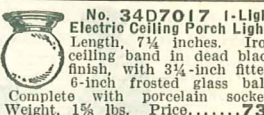
Polished Brass Chandeliers
3 LIGHT ELECTRIC FIXTURE NOT WIRED NO GLASS \$180
3 LIGHT GAS FIXTURE BARE NO GLASS \$220
COMPLETE AS SHOWN WIRED \$345
COMPLETE AS SHOWN \$285
Length, 36 inches. Spread, 18 in. Ball body, one-half inch stem. Crystal shades in star pattern.
No. 34D1300 2-Light Gas Chandelier. Price, bare.....\$1.75
Price, complete with glass.....\$2.20
No. 34D1301 3-Light Gas Chandelier. Price, bare.....\$2.20
Price, complete with glass.....\$2.85
No. 34D5300 2-Light Electric Chandelier. Price, bare.....\$1.50
Price, wired, with glass.....\$2.49
No. 34D5301 3-Light Electric Chandelier. Price, bare.....\$1.80
Price, wired, with glass.....\$3.45
No. 34D3300 4-Light Combination Chandelier. Price, bare.....\$2.65
Price, wired, with glass.....\$4.39



No. 34D8022 Metal Overlaidd Art Glass Portable. Height, 23 inches. Antique brass finish. 18-inch shade. Upper panels are amber color and border panels blended amber and red art glass. Two chain pull sockets, silk cord and plug. Price.....\$11.98



Five Light Sheffield Electric Shower \$1300
Length, 31½ inches. Spread, 14 inches. Embossed Sheffield 6-inch ceiling canopy and 18-inch body pan. Brush brass and black finish. Four solid brass chains support pan, from which extend five lights on link chains fitted with 2½-inch embossed Sheffield key socket covers. Frosted Sheffield glass shades.
No. 34D5710 Bare. Price.....\$9.95
Wired, complete with glassware. Price.....\$13.00



No. 34D7017 1-Light Electric Ceiling Porch Light. Length, 7¼ inches. Iron ceiling band in dead black finish with 3¼-inch fitter. 6-inch frosted glass ball. Complete with porcelain socket. Weight, 1½ lbs. Price.....\$73c



ART GLASS CHAIN DOME LIGHT \$758
Length to bottom of fringe, 54 inches. 22-inch dome made of eight panels of curved green art glass with 4-inch amber beaded fringe and art glass crown. 5-inch brass ceiling canopy. The chain is heavily brass plated in brush (satin) brass finish.
No. 34D8507 Wired, complete. Price \$7.58
No. 34D8506 Same dome, but equipped for gas with brass stem instead of chain and with complete inverted light.
Price.....\$8.29

ELECTRICAL HOUSE WIRING SUNDRIES and GAS BURNERS



Porcelain Fuseless Rosette. Equipped with a cap which snaps in place by a slight turn.
No. 34D6740
Price, each.....12c



Bryant "New Wrinkle" Keyless Socket. Brush brass or polished brass finish. State finish desired. 1/2-inch cap.
No. 34D6502
Price, each.....28c
Price, each, in lots of 25 to 100.....24c
Price, each, in lots of 100 to 500.....20c



Bryant "New Wrinkle" Key Socket. Brush brass or polished brass finish. State finish desired. 1/2-inch cap.
No. 34D6500
Price, each.....30c
Price, each, in lots of 25 to 100.....26c
Price, each, in lots of 100 to 500.....22c



Bryant "New Wrinkle" Chain Pull Socket. Brush brass or polished brass finish. State finish desired. 1/2-inch cap.
No. 34D6504
Price, each.....58c
Price, each, in lots of 25 to 250.....40c



Keyless Wall Socket. With brass bayonet shell. Porcelain concealed wall base. Holes for supporting screws, spaced 1 1/4 in. on centers. Edison base.
No. 34D6509
Price, each.....23c



Bryant "New Wrinkle" Key Wall Socket. Edison base. Brush brass (satin) finish. Porcelain wall base. Holes for supporting screws spaced 1 1/4 inches on centers.
No. 34D6506
Price, each.....43c



Bryant "New Wrinkle" Twin Chain Pull Socket. Polished brass finish with Edison plug base. Fits any standard socket. First pull disconnects one socket, second pull disconnects both sockets.
No. 34D6558 Each.....\$1.35



Plug Cluster. with a porcelain body and brass body shell in brush brass finish. To increase the number of lights or to operate an electric fan and one light at the same time.
No. 34D6552 2-light.
Price, each.....80c
No. 34D6553 3-light.
Price, each.....\$1.04



Wireless Cluster. Has a porcelain body with a genuine brass body shell in brush brass or polished brass finish. State finish desired.
No. 34D6550 3-light.
Price, each.....\$1.35
No. 34D6551 4-light.
Price, each.....\$1.55



Weatherproof Porcelain Keyless Socket. Fitted with 6 inches of No. 14 B. & S. Standard rubber covered wire. Edison base. For outdoors and in damp places.
No. 34D6545
Price, each.....11c



Single Branch Double Pole Cut-Out Block.
No. 34D6727
Price, each.....19c
No. 34D6728 Double Branch Three-Wire Cut-Out Block.
Price, each.....39c
No. 34D6729 Double Branch Two-Wire Cut-Out Block.
Price, each.....38c



Twenty-Five Ampere Porcelain Combination Main Line or Entrance Switch and Cut-Out. For plug fuses.
No. 34D6725
Price, each.....59c



Turn Button Switch. Single pole; five amperes. Polished nickel finish. Holes for supporting screws are spaced 1 1/4 inches on centers.
No. 34D6736
Price, each.....21c
No. 34D6735 Same as No. 34D6736 but three-way.
Price, each.....36c
No. 34D6737 Same as No. 34D6736 and indicating "On" and "Off."
Price, each.....24c



Push Button Switch. Single pole; five amperes.
No. 34D6730
Price, each.....42c
No. 34D6731 Same as No. 34D6730, but three-way.
Price.....63c
No. 34D6732 Wall Flush Plate for Switch No. 34D6730 when one switch is used. Made of genuine brass in brush brass finish. Complete with screws.
Price, each.....13c
No. 34D6734 Wall Flush Plate for Switch No. 34D6730 when two switches are used.
Price, each.....26c
No. 34D6556 Attachment Plug. Having a rotating sleeve which makes it possible to attach the plug quickly without twisting the cord.
Price, each.....15c



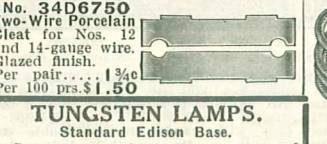
Opal Glass Upright Incandescent Airhole Gas Globe. Height, 6 1/2 inches; diameter, 4 3/4 in.
No. 34D9566
Price, each.....17c
Three for.....48c
No. 34D6741 One-Piece Fuseless Porcelain Plug Rosette. Carries wires 1/2 in. from the surface—wired over. Can be used on concealed wiring having holes for bringing the wires up through. Holes for holding screws have been spaced 1 1/4 inches on centers.
Price, each.....8c



Porcelain Tubes.
No. 34D6745 1/2x3 inches. Price, each.....4c
Price, per 100.....60c
No. 34D6746 1/2x3 inches. Price, each.....1 1/4c
Per 100.....\$1.00



Cotton Covered Electric Cord. Two conductors twisted. 18-gauge.
No. 34D6793
Price, per foot.....\$0.03
Per 100 feet.....2.75



TUNGSTEN LAMPS. Standard Edison Base. Consume one-third the amount of current used by a carbon lamp of equal candle power.
No. 34D6750 Two-Wire Porcelain Cleat for Nos. 12 and 14-gauge wire. Glazed finish.
Per pair.....13c
Per 100 prs.....\$1.50



Flexible Silk Covered Duplex Lamp Cord in one casing, 6 feet in length, with rotating sleeve plug attached.
No. 34D6796
Price, complete.....39c



HOUSE AND FIXTURE WIRE.
No. 34D6796 Flexible Silk Covered Duplex Lamp Cord in one casing, 6 feet in length, with rotating sleeve plug attached.
Price, complete.....39c



L Burner Cocks. Furnished in the following sizes:
No. 34D6982 1/2x3/4 in. Price, each.....14c
No. 34D6983 3/4x3/4 in. Price, each.....17c
No. 34D6984 1x3/4 in. Price, each.....16c
No. 34D6985 1 1/2x3/4 in. Price, each.....15c
No. 34D6986 1 3/4x3/4 in. Price, each.....16c
No. 34D6987 1 1/2x1 in. Price, each.....18c
No. 34D6988 1 3/4x1 in. Price, each.....21c



Clear Glass Carbon Filament Lamps. Standard Edison Base.
No. 34D6714 Edison Base Plug Fuses. From 6 to 30 amperes. Price, each.....6c
Per doz.....55c



Clear Glass Tungsten Lamps.
No. 34D6810 25-watt.
Price, each.....22c
No. 34D6811 40-watt.
Price, each.....22c
No. 34D6812 60-watt.
Price, each.....22c
No. 34D6813 75-watt.
Price, each.....22c
No. 34D6814 100-watt.
Price, each.....22c




Frosted Bottom Tungsten Lamps.
No. 34D6811 25-watt.
Price, each.....24c
No. 34D6812 40-watt.
Price, each.....24c
No. 34D6813 60-watt.
Price, each.....24c
No. 34D6814 75-watt.
Price, each.....24c
No. 34D6815 100-watt.
Price, each.....24c



New Code Heavy Insulated Wire.
No. 34D6781 10-gauge.
Price, per 100 feet, \$3.00; per ft. 3/4c
No. 34D6783 12-gauge.
Price, per 100 feet, \$2.75; per ft. 3/4c
No. 34D6782 14-gauge.
Price, per 100 feet, \$1.50; per ft. 1 1/4c
No. 34D6784 16-gauge.
Price, per 100 feet, \$1.25; per ft. 1 1/2c
No. 34D6786 18-gauge.
Price, per 100 feet, \$1.00; per ft. 1 1/4c
No. 34D6780 14-Gauge Duplex Solid Wire in one casing.
Price, per 100 feet, \$2.75; per ft. 3/4c
No. 34D6790 16-gauge.
Price, per 100 feet, \$2.75; per ft. 3/4c
No. 34D6792 18-gauge.
Price, per 100 feet, \$2.00; per ft. 2 1/2c



Acetylene Gas Burners. The pillar is made of solid brass, nickel plated and is fitted with one-piece imported genuine German lava tip.
No. 34D6914 Covered Gas Hose, 6 feet long. Made of green non-hair covered rubber tubing with brass connections at ends.
Price, each.....27c
No. 34D6930 1/2-Foot Burner.
Price, each.....11c
No. 34D6931 3/4-Foot Burner.
Price, each.....11c
No. 34D6932 1-Foot Burner.
Price, each.....11c
No. 34D6933 1 1/2-Foot Burner.
Price, each.....11c



Single Pillar Gas Cocks. Furnished in the following sizes:
No. 34D6985 1/2-in. Price, each.....15c
No. 34D6986 3/4-in. Price, each.....16c
No. 34D6987 1-in. Price, each.....18c
No. 34D6988 1 1/2-in. Price, each.....21c



CIRCULAR LOOM.
No. 34D6577 1/4-inch. Per foot.....\$0.03 1/2
Per 100 feet.....2.75
No. 34D6578 1/2-inch. Per foot.....\$0.04 1/2
Per 100 feet.....4.50



INVERTED GAS PORCH LIGHT FOR OUTDOOR USE. Made of genuine brass, heavily nickel plated. Length to bottom of globe, 11 1/2 inches. Magnesia mantle holder and reflector with spring globe holder. Fitted with 5-inch clear glass globe, mantle and bypass. For artificial or natural gas.
No. 34D6601 Two-wire.
Price, per foot.....13c
Per 100 feet.....\$1.55
No. 34D6602 Three-wire.
Price, per foot.....2 1/4c
Per 100 feet.....\$2.25



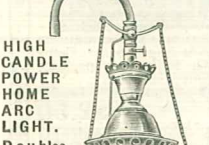
INCANDESCENT GAS LIGHTS.
No. 34D6810 25-watt.
Price, each.....22c
No. 34D6811 40-watt.
Price, each.....22c
No. 34D6812 60-watt.
Price, each.....22c
No. 34D6813 75-watt.
Price, each.....22c
No. 34D6814 100-watt.
Price, each.....22c



Clear Glass Airhole Chimney. Fine thin lead blown glass. Full fire finish. Height, 7 inches.
No. 34D9571
Price, each.....16c



INCANDESCENT GAS MANTLES. Quoting our mantles by the half dozen enables us to sell them at a very low price and assures the family of having extra mantles in the house in case the one on the lamp should break suddenly.
CAP AND INVERTED MANTLES.
No. 34D2460 Our Lead Cap Mantle. Single weave.
Price, half dozen.....48c
No. 34D2461 Our Leader Inverted Mantle. On magnesia ring. Single weave.
Price, half dozen.....48c
No. 34D2465 Cap Mantle. Special single weave.
Price, half dozen.....76c
No. 34D2466 Inverted Mantle. On magnesia ring. Double weave.
Price, half dozen.....76c
No. 34D2462 Cap Mantle. Special triangle weave.
Price, half dozen.....65c
No. 34D2463 Inverted Mantle. On magnesia ring. Special triangle weave.
Price, half dozen.....65c
No. 34D2475 Cap Mantle. Special diamond weave. Double impregnation.
Price, half dozen.....98c
No. 34D2476 Inverted Mantle. On magnesia ring. Special diamond weave. Double impregnation.
Price, half dozen.....98c



HIGH CANDLE POWER HOME ARC LIGHT. Doubles the candlepower and consumes no more gas than any ordinary inverted light. Genuine brush brass burner with patent automatic air and gas mixing mouthpiece, magnesia mantle support, by-pass, goose-neck, "Black Diamond" mantle and round Alada (heat resisting) opal glass shade.
No. 34D2439
Price, complete.....\$1.89



INVERTED GAS PORCH LIGHT FOR OUTDOOR USE. Made of genuine brass, heavily nickel plated. Length to bottom of globe, 11 1/2 inches. Magnesia mantle holder and reflector with spring globe holder. Fitted with 5-inch clear glass globe, mantle and bypass. For artificial or natural gas.
No. 34D2442 For artificial gas.
Each.....\$4.50
No. 34D2437 For natural gas.
Price, each.....\$4.50
Write for our new Lighting Fixture Catalog, showing complete line of Fixtures and House Wiring Sundries.



INCANDESCENT GAS LIGHT. Solid brass burner fitted with air shutter and adjustable gas regulator, inverted mantle and one-half frosted blown glass globe.
No. 34D2425 Boxed. Price.....36c



SEARS SPECIAL COMPLETE INVERTED GAS LIGHT. Extra heavy solid brass burner, fitted with air shutter, side screw gas regulator, magnesia metal bound mantle holder, high quality inverted mantle and one-half frosted blown glass globe.
No. 34D2430 Boxed. Price.....58c



BLACK DIAMOND MANTLES. XXX Sears Special Quality. Brilliant, durable, non-shrinkable, uniform. Genuine R mantle thread. Triple weave, double thorium impregnation mixed with carbon.
No. 34D2450 Black Diamond Cap Mantle. Mounted on metal cap and magnesia coated wire.
Price, half dozen.....98c
No. 34D2452 Black Diamond Inverted Mantle. Mounted on standard magnesia ring. Price, 1/2 doz.....84c
No. 34D2454 Black Diamond Inverted Mantle. Mounted on metal ring, which allows by-products of combustion to escape freely.
Price, half dozen.....\$1.10
GASOLINE MANTLES.
No. 34D2485 Arc Pressure Gasoline Loop Mantle. For overhead gasoline pressure lamps. Rolled skirt. Suspended on heat resisting wire. Length, 5 in. Price, 1/2 doz.....98c
No. 34D2495 Soft Inverted Gasoline System Mantle. Single weave.
Price, half dozen.....49c



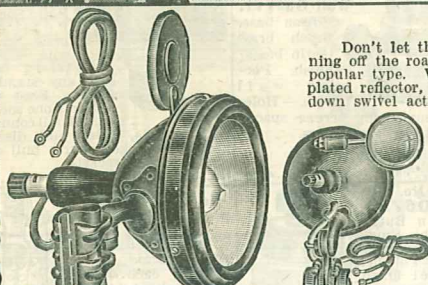
GASOLINE MANTLES. No. 34D2485 Arc Pressure Gasoline Loop Mantle. For overhead gasoline pressure lamps. Rolled skirt. Suspended on heat resisting wire. Length, 5 in. Price, 1/2 doz.....98c
No. 34D2495 Soft Inverted Gasoline System Mantle. Single weave.
Price, half dozen.....49c

Good Lights Make Good Auto Insurance

STANDARD AUTO SPOT LIGHT.

Don't let the pleasures of night riding be spoiled for you by the thought of losing your way, running off the road, running into other cars or obstructions at turns, etc. A standard searchlight of new popular type. Well made and finished black enameled. Furnished with about 6-inch front and silver plated reflector, with 6-8-volt 24-candle power nitrogen bulb reflecting powerful light rays. Has up and down swivel action. Fitted with handy adjustable rear sight mirror at top rear. Complete with about 5 feet of lighting cord and on and off switch at handle end, with push and pull focusing device. Furnished with universal bracket jaws for round, square or oval wind shield frame. Shipping weight, about 4 1/2 pounds. For use on Ford cars, order No. 28H13058 Spot Light, if spot light is to be operated from magneto. If used in connection with 6 to 8-volt storage battery on Ford cars, order No. 28H13050 Spot Light.

No. 28H13050 Standard Auto Spot Light. Price.....\$3.75
No. 28H13071 Nitrogen Spot Light Bulb, 6-8 volt, 24-candle power, single contact, Edison base. Extra bulb for use with No. 28H13050 Spot Light. Price.38c
No. 28H13058 Standard Auto Spot Light for Ford cars. Has 18-24 volt, 24-candle power, single contact Edison base nitrogen bulb. Price.....\$3.95
No. 28H13072 Extra Bulb 18-24-volt, 24-candle power, single contact Edison base nitrogen bulb. Extra bulb for use with No. 28H13058 Spot Light. Price.....40c



Leader Tail Lamp.

A reliable oil tail lamp; will not readily go out in use. Black enamel finish. Height, about 9 inches; has ruby color lens about 2 1/2 inches and front lens about 3 1/2 inches. Shpg. wt., abt. 1 1/2 lbs.

No. 28H5748 Leader Tail Lamp. Price, each.....\$1.10

Lamp Bases.



Be sure to order the right style base.

Dash Trouble Lamp.

A combination dash trouble lamp, has 2-candle power, 6-volt tungsten bulb, wood dash connector and 16-foot extension cord fitted with plug on one end and socket on other. Has handy on and off switch. All fittings Edison, for wood dash. Shipping weight, either style, about 1 1/2 pounds.

No. 28H6328 Combination Dash and Trouble Lamp, double contact connector plug. Price.....\$1.65

No. 28H6329 Combination Dash and Trouble Lamp, single contact connecting plug. Price.....\$1.68

C. S. Dash Lamp.

A neat standard type dash lamp. Furnished with 6-volt 2-candle power tungsten lamp with Edison socket. Has on and off switch. Furnished nickel plated. Length, about 3 1/2 inches. Complete with wire leads. Shipping weight, 12 ounces.

No. 28H6255 C. S. Dash Lamp. Price.....70c

C. S. Extension Dash Lamp.

An extension type dash lamp, similar to No. 28H6255 C. S. Dash Lamp, but about 4 1/2 inches long, extending about 1 1/2 inches out from dash. Handy on and off switch. Complete with 6-volt 2-candle power tungsten lamp, with Edison socket and wire leads. Shipping weight, 12 ounces.

No. 28H6250 C. S. Extension Dash Lamp. Price.....75c

Lamp Tubing.

Standard red rubber lamp tubing, 3/8-in. opening, 1/2-in. wall. Shpg. wt., abt. 1/2 oz. per foot. No. 28H6595 Rubber Tubing. Price, per foot.....4c



Perfection Gas Burner.

A well known high grade burner. Made of lava. Furnished in two sizes, 1/2 or 3/4-foot. State size. No. 28H5825 Perfection Burner. Price, each.....19c

Alco De Luxe Burner.

Lava parts threaded to screw into nickel plated pillar. 1/2 or 3/4-foot size. (Not illustrated.) Nickel plated. No. 28H5855 Alco De Luxe Burner. Price, each.....20c Shipping wt., either style, about 2 oz.



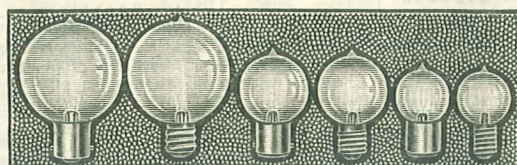
Lamp Cord.

New code twisted green and yellow cotton lamp cord No. 18. Shpg. wt., either style, per foot, about 1/2 ounce. No. 28H6356 Price, per foot.....3c

New code twisted green silk lamp cord No. 22. No. 28H6357 Price, per foot.....3 1/2c

Portable Lamp Cord. New code type P saturated braid Portable cord No. 18. Shpg. wt., per ft., abt. 1 oz. No. 28H6359 Price, per foot.....5c

Mazda Tungsten Lamps



Standard well known Tungsten lamp bulbs. Nos. 28H6035, 28H6037 and 28H6038 are for headlight use, with candelabra or double contact Edison base. No. 28H6031 is a headlight bulb of the same type but about one-sixth smaller. Nos. 28H5995 and 28H5996 are side lamp bulbs; furnished only with candelabra or double contact Edison base.

No.	C.P.	Volts	Amperes	Shpg. Wt.	Price
28H6035	12	6-8	1.50	6 oz.	20c
28H6037	15	6-8	2.50	6 oz.	20c
28H6038	21	6-8	3.50	6 oz.	22c
28H6031	12	6-8	2.00	6 oz.	20c
28H5995	4	6-8	.84	3 oz.	16c
28H5996	6	6-8	1.20	3 oz.	18c
28H5997	2	6-8	.42	3 oz.	16c
28H5998	4	6-8	.84	3 oz.	18c

Single (Center) Contact Lamp, Edison Base only. (See illustrations in column at left.)

No.	C.P.	Volts	Amperes	Shpg. Wt.	Price
28H6040	15	6-8	2.50	6 oz.	20c
28H6050	21	6-8	3.50	6 oz.	22c
28H6032	12	6-8	2.00	6 oz.	20c
28H5995	4	6-8	.84	3 oz.	16c
28H5996	6	6-8	1.20	3 oz.	18c
28H5997	2	6-8	.42	3 oz.	16c
28H5998	4	6-8	.84	3 oz.	18c

Nitrogen Bulbs, Double Contact Edison Base only. No. 28H6075 21 6-8 2.5 6 oz. 26c

Nitrogen Bulbs, Single Contact Edison Base only. No. 28H6076 21 6-8 2.5 6 oz. 26c

Nitrogen Bulbs, Double Contact Edison Base only. No. 28H6080 36 6-8 4.00 6 oz. 57c

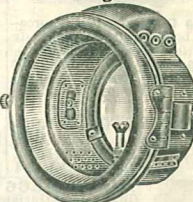
Nitrogen Bulbs, Single Contact Edison Base only. No. 28H6081 36 6-8 4.00 6 oz. 57c

Nos. 28H6075 and 28H6076 Bulbs are about one-sixth smaller than Nos. 28H6080 and 28H6081 Bulbs, which are same size as No. 28H6055.

Lamps shown adapted for use with 6, 7 or 8-volt lighting systems. Always state style base. Make sure you order the right style base. See illustrations at left.

Mangin Mirror Headlight.

A standard well made glass headlight. Fitted with 6-inch Mangin mirror and nickel plated band reflector, projecting light correctly. Furnished in two finishes, black enameled throughout and black enameled body with nickel plated door. Widths given between projectors. No. 28H5354 Door diameter, about 10 inches; width, about 8 inches; length (depth), about 7 inches. Shipping weight, about 8 1/2 lbs.



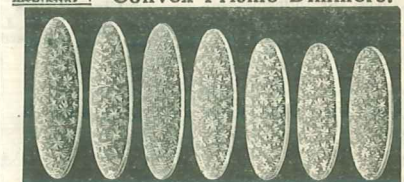
All black finish. Price, each.....\$2.90
No. 28H5355 Same as No. 28H5354. Black and nickel plated finish. Each.....2.95

Mangin Mirrors.

Accurately ground lenses with durable silver plating on back.

No.	Diam.	Net Wt.	Shpg. Wt.	Price Each
28H5685	5	11	1 1/4	\$0.50
28H5686	8	18	1 1/4	.75
28H5687	7	27	2 3/4	.95
28H5688	8	44	3 3/4	1.35

Convex Prismo Dimmers.



Convex Prismo Dimmers change the blinding headlight glare to an equally effective softened diffused light. Furnished in pairs in seven sizes, as listed below.

No.	Size, Inches	Shipping Wt., About, Lbs.	Price, Per Pair
28H5696	8 1/4	1 1/4	\$0.75
28H5697	8 1/2	1 1/4	.80
28H5698	9	1 1/2	.90
28H5699	9 1/4	1 1/2	.95
28H5700	9 1/2	2	1.00
28H5701	9 3/4	2 1/4	1.05
28H5702	10	2 1/2	1.10

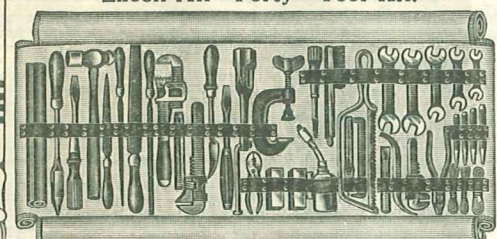
Leader Trouble Finder.

Our leader trouble lamp. Has 6-volt 6-candle power lamp, candelabra socket, 10 feet of lighting cord and copper terminals. Wire guard protects bulb. Handle has hook for hanging up lamp. Shipping weight, about 9 ounces.



No. 28H6210 Leader Trouble Lamp. Price.....70c

Excell-All "Forty" Tool Kit.



A complete assortment of standard tools, forty in number, practically everything necessary for making repairs. Includes a complete assortment of wrenches, punches, chisels, pliers, screwdrivers, files, soldering accessories, hammer, hack saw, etc. Shipping weight, about 16 pounds.

No. 28H11270 Excell-All "Forty" Tool Kit. Price, complete with roll.....\$11.15
No. 28H11271 Tool Roll only. Shipping weight, about 1 lb. 9 oz. Price.....1.30

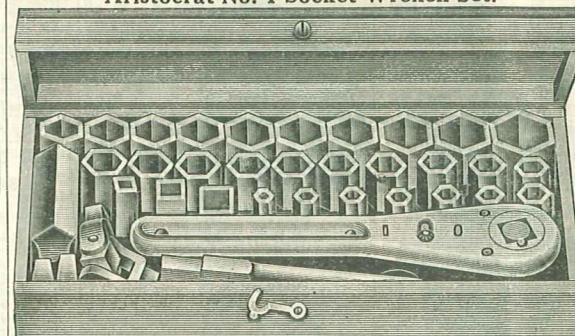
Autoists' "Thirty" Kit.

This kit contains all tools needed for ordinary repairs. Complete with thirty standard tools in water resisting heavy canvas tool roll, with sewed and riveted leather retaining straps. This kit practically duplicates on a smaller scale our Excell-All Kit No. 28H11270, shown above. Shpg. wt., about 12 lbs.

No. 28H11250 Autoists' "Thirty" Kit. Price, complete with roll.....\$7.20
No. 28H11251 Tool Roll only. Shipping weight, about 1 1/4 pounds. Price.....1.00

TOOL KITS AND SOCKET SETS.

Aristocrat No. 1 Socket Wrench Set.



A popular socket wrench set. Enables you to remove any nut or cap screw by ratchet motion. Set comprises standard universal, reversible, pressed steel ratchet wrench handle, extension bar, two screwdriver bits, universal joint, spark plug socket with 2 1/2-inch opening size and thirty hardened steel sockets. Outfit includes twenty-seven hexagon wrench sockets, having opening sizes from 3/16 to 1 1/2 inches; sizes from 1/16 to 1 inch, graduated 1/32 inch; sizes larger than 1 inch, 1 1/2, 1 3/4, 2, 2 1/2 and 3 inches, three square wrench sockets having opening sizes 1 1/2, 2 and 2 1/2 inch. Complete with hardwood box. Shpg. wt., abt. 9 lbs.

No. 28H11203 Aristocrat No. 1 Socket Wrench Set.....\$6.90

Our "Fourteen" Leader Tool Kit.



A popular low priced kit containing fourteen standard most used tools. Complete with case with individual pockets. Shipping weight, about 5 1/4 pounds.

No. 28H11290 "Fourteen" Leader Tool Kit. Price.....\$2.50

No. 28H11291 Roll only. Shipping weight, about 6 ounces. Price.....32c

Cochran Speed Nut Wrench.

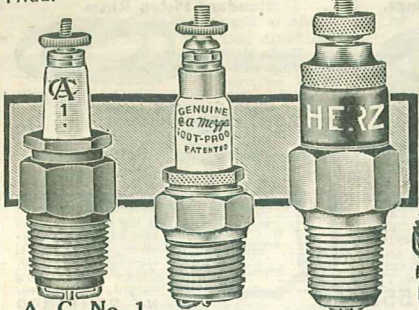


Quickly grips any square or hex nut. Opening size from about 1/8 to 1 1/2 inches. Ratchets on nut, holding nut firmly. Requires no thumb adjustment. Practically a whole wrench kit in one. Shipping weight, about 1 1/4 pounds.

No. 28H11220 Cochran Speed Nut Wrench. Price.....75c

Current Needs for Good Ignition

FOR STANDARD STYLES OF SPARK PLUGS SEE BOTTOM OF CENTER COLUMN OF THIS PAGE.



A. C. No. 1.

A well known standard porcelain plug, furnished in three standard sizes. Shpg. wt. any size, 5 oz.
No. 28H7475 1/2-inch size. Price... 75c
No. 28H7476 Metric size. Price... 75c
No. 28H7477 3/4-inch size. Price... 75c
A. L. A. M. size. Price... 75c
No. 28H7495 Extra porcelain. Shpg. wt., 4 oz. Price... 28c

Mezger Sootproof.

A well known reliable spark plug. Furnished in three standard sizes. Shipping wt., any size, 5 oz.
No. 28H7596 1/2-inch size. Price... 50c
No. 28H7597 Metric size. Price... 50c
No. 28H7598 3/4-inch size. Price... 50c
A. L. A. M. size. Price... 50c

Herz.

A famous spark plug, noted for its efficiency. Furnished in two sizes. Shpg. weight, either 6 ounces.
No. 28H7374 1/2-in. iron pipe size. Price... \$1.00
No. 28H7375 A. L. A. M. size. Price... \$1.00

Leader.

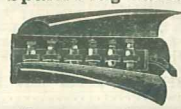
A low priced mica plug; good value for the money. Furnished in three standard sizes. Shipping weight, any size, about 4 ounces.
No. 28H7390 1/2-in. size. Price... 35c
No. 28H7391 Metric size. Price... 35c
No. 28H7392 A. L. A. M. size. Price... 35c

Standard Spark Plug Wrench.



Standard spark plug wrench with removable hand rod. Has about 2 1/2-inch opening size. Shipping weight, about 1 lb.
No. 28H7668 Standard Spark Plug Wrench. Price... 16c

Spark Plug Case.



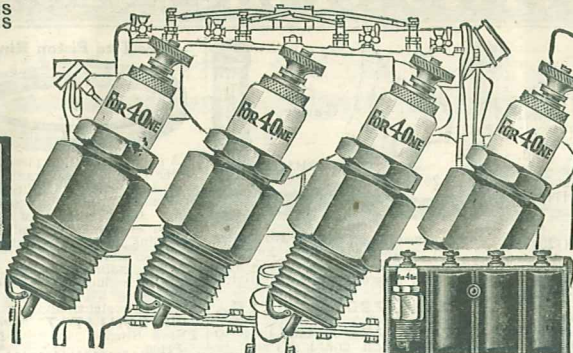
Keep your extra spark plugs clean. Made of enameled drill, cloth flaps, sliding straps with loops to hold six plugs. Shipping weight, about 3 ounces.
No. 28H5325 Spark Plug Case. Price, each... 12c

PARANITE IGNITION CABLE.

High Tension Magneto.
High tension magneto cable designed especially for magneto use. 3/4-inch wall of rubber. Outside diameter, 2 3/4 in. Shpg. wt., per ft., abt. 1 1/2 oz.
No. 28H8300 No. 38 High Tension Magneto Cable. Price, per foot... 11c
Low Tension Cable.
Conductor composed of stranded tinned copper wires covered with braids of glazed cotton with two coats of enamel baked on. Outside diameter, 1 3/4 in. Shipping weight, per foot, about 1 ounce.
No. 28H8302 No. 30 Parantite Low Tension Cable. Price, per foot... 4c
No. 28H8304 No. 30-2 Parantite Two-Strand Low Tension Cable. Shipping weight, per foot, about 2 ounces. Price, per foot... 7c
No. 28H8306 No. 30-3 Parantite Three-Strand Low Tension Cable. Outside diameter, 2 3/4 in. Shipping weight, per foot, about 2 ounces. Price, per foot... 10c
High Tension Cable.
An excellent low priced high tension magneto cable. Outside diameter, 2 3/4 in. No. 28H8308 No. 32 Parantite High Tension Cable. Shipping weight, per foot, about 1 1/2 oz. Price, per foot... 7c
Peerless Ignition Cable.
A reliable low priced insulated cable for primary and secondary wiring.
No. 28H8488 Primary 21 3/4 in. 1 oz. 3c
No. 28H8490 Secondary 33 2 1/4 in. 2 oz. 6c
No. 28H8489 Secondary 44 3 1/2 in. 3 oz. 8c

Famous Bulldog Battery Connection.

Snap them on and they will never jar off. Well made connections.
No. 28H8725 Shipping wt., 2 oz. Each. 4c
No. 28H8726 Shpg. wt., 4 oz. Box of 10. 25c



Our 4-for-1 Spark Plug Outfit.

Four standard type spark plugs, complete with fabric case, at the usual price of one good plug. Standard open end porcelain plugs, furnished in 1/2-inch, metric or A. L. A. M. sizes. In ordering specify size desired. Shipping weight, about 1 1/2 pounds.
No. 28H7435 Our 4-for-1 Spark Plug Set. Price, per set... 90c

Champion Priming.



A well known reliable spark plug which needs no description. Will help start your motor quickly in cold weather by injecting gasoline in priming cup. Furnished in two sizes only. Shipping wt., either size, 6 ounces.
No. 28H7480 1/2-inch standard pipe size. Price... 89c
No. 28H7482 A. L. A. M. size. Price... 89c

Champion Regular.



A well known high grade plug which needs no description. Furnished in two sizes only. Shipping weight, either size, 5 ounces.
No. 28H7485 1/2-inch size. Price... 70c
No. 28H7487 A. L. A. M. size. Price... 70c

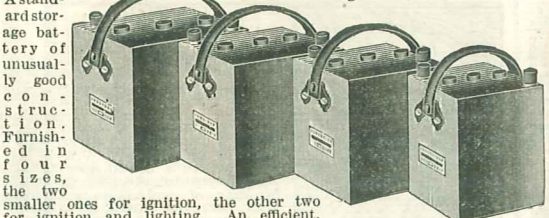
ELECTRICAL SUNDRIES

Stand-By Special Automobile Dry Battery.



A well known dry battery especially designed for ignition work. Coils test from 22 to 25 amperes. Size, 2 1/2 x 6 in. Shpg. wt., about 2 1/2 lbs.
No. 28H8659 Stand-By Special Automobile Dry Battery. Price, each... 28c
Price subject to change without notice on account of market conditions.

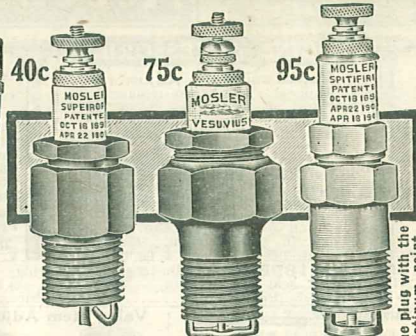
Peerless Storage Batteries.



A standard storage battery of unusually good construction. Furnished in four sizes, the two smaller ones for ignition, the other two for ignition and lighting. An efficient, high grade battery which will give splendid satisfaction. Battery should be recharged every six to eight weeks to avoid possible sulphating and ruining of plates.
Height, Width, Length Shpg. Inches, Inches, Over All, Wt. In. Lbs.
No. 28H8521 1/4 6-V. 40-Amp. 8 1/2 8 20 \$ 7.35
No. 28H8510 3/4 6-V. 60-Amp. 8 1/2 8 36 9.95
No. 28H8510 1/2 6-V. 80-Amp. 8 1/2 10 42 14.25
No. 28H8505 3/4 6-V. 120-Amp. 8 1/2 12 54 18.95

Acid Testing Syringe.

For testing acid and filling storage batteries with electrolyte. By watching the specific gravity of the cells you can often detect conditions that may mean trouble if prompt action is not taken. Shpg. wt., about 1 lb.
No. 28H8560 Acid Testing Syringe. Price... 55c



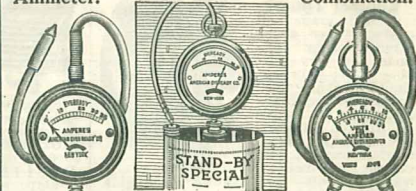
MOSLER SPARK PLUGS.

Superior. An efficient, inexpensive open end porcelain spark plug. Furnished in three sizes. Shpg. Comes in neat wt., any size, 5 ounces.
No. 28H7520 1/2-inch size. Price... 40c
No. 28H7521 Metric size. Price... 40c
No. 28H7522 A. L. A. M. size. Price... 40c
Vesuvius. A heavy service plug, especially well adapted for use with high tension magneto. Comes in neat lithographed can. Furnished only in 1/2 inch and A. L. A. M. sizes. Shpg. wt., either size, 6 ounces.
No. 28H7530 1/2-in. standard pipe size. Price... 75c
No. 28H7532 A. L. A. M. size. Price... 75c
Spitfire. A famous high grade spark plug with platinum contact point designed against wearing and pitting. In three standard sizes. Shpg. wt., any size, 5 oz.
No. 28H7515 1/2-in. standard pipe size. Price... 95c
No. 28H7516 Metric size. Price... 95c
No. 28H7517 A. L. A. M. size. Price... 95c

Kingston.

A well known reliable mica plug made by the Kokomo Electric Co. Furnished in three standard sizes. Shipping weight, any size, about 4 ounces.
No. 28H7450 1/2-inch standard pipe size. Price... 40c
No. 28H7451 Metric size. Price... 40c
No. 28H7452 A. L. A. M. size. Price... 40c

Eveready Automobile Battery Testing Meters.



Registers from 0 to 35 amperes. Nickel plated; complete with cloth bag. Shipping weight, 5 ounces.
No. 28H8844 Eveready Automobile Ammeter. Price... 70c
Combination. This is an Automobile Ammeter and a Voltmeter in one instrument. Registers from 0 to 35 amperes and 0 to 10 volts. Complete with cloth bag. Shipping weight, 5 ounces.
No. 28H8853 Automobile Combination Ammeter-Voltmeter. Price... 89c

Standard Dash Coils.

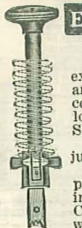
Standard dash coils, made by the Pfanzstiel Electric Co. Have many excellent features; very efficient. Produce a hot flame, consume current economically, and keep in correct adjustment well. Come in three styles as listed below, with magneto kick switch.
No. of Cylinders Shpg. Wt. Price
No. 28H7755 1 6 \$ 6.43
No. 28H7756 2 8 10.28
No. 28H7758 4 15 18.00

Challenge Coils.

A very serviceable low priced coil. For one and two-cylinder engines only.
No. 28H7813 Challenge Coil, one-cylinder size. Shpg. wt., about 4 lbs. Price... \$2.45
No. 28H7814 Challenge Coil, two-cylinder size. Shpg. wt., about 7 lbs. Price... \$4.75

Accessories for the Ford Engine

ENGINE ACCESSORIES.



Valves and Valve Adjusters.

Adjustable valves save replacement expense of new valves, push rods and springs. Come in sets of eight, complete with spring seats and locknuts, without valve springs. Shpg. wt., per set, about 2 1/2 lbs. No. 28H11899 Ad-justable Valves. Per set. \$2.25 Spring Seat and Locknut for placing extra tension of nearly 1/4 inch on weak, worn valve springs. Come in sets of eight. Shipping weight, per set, about 1 pound.

No. 28H11898 Valve Adjusters, comprising spring seat and locknut, 5/16x18 thread. Per set. 70c

Valve Reseater.

For reaming out valve seat when valve is badly pitted and imperfectly seated. Cutting surface made of hardened steel, balance of tool cold rolled steel. Has cutter complete with pilot. Shpg. wt., about 12 oz.

No. 28H11253 Valve Reseater. Price, 40c

Valve Stem Adjusters.

Set comprises eight shells and about forty-eight discs. Hardened, durable shells. Discs designed for close adjustment. Shpg. wt., abt. 2 oz. No. 28H11861 Valve Stem Adjusters. Price, per set. 20c

Valve.

Has cold rolled steel stem, welded cast iron head. Shpg. wt., about 5 oz. No. 28H11209 Valve. Price, 15c

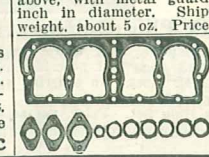
Spring. Shpg. wt., abt. 3 oz. 3c



Oil Gauges.

Shows constant oil level. Brass finish, well made; glass, 5/8 inch in diameter. Remove lower pet cock and replace with gauge. Shipping weight, about 5 ounces. No. 28H11720 Oil Gauge. Price, 15c

No. 28H11721 Similar to above, with metal guard. Glass, 1/2 inch in diameter. Shipping weight, about 5 oz. Price, 20c



Victor copper-brass and asbestos cylinder head gaskets, for use on the engine cylinders. Shipping weight, 12 ounces. No. 28H11750 Price, each. 33c No. 28H11751 Victor Gasket Set, containing eleven gaskets in all the sizes needed around the Ford engine, including cylinder head gasket. Shipping weight, about 13 ounces. Price, 45c

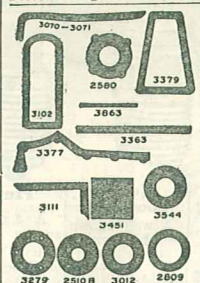
Sure-Tite Piston Rings.



A splendid oiltight piston ring. Outer ring is close grain, tough gray iron, cast individually and of standard lap joint construction. Inner ring is of special drawn spring steel, and covers lap joint, insuring uniform tension against cylinder walls. Helps eliminate carbon, ring slap and reduces wear on cylinder. Size, 3 3/4 inches only. Shipping weight, about 4 oz. No. 28H11717 Sure-Tite Piston Rings. Price, 55c

Standard Piston Rings.

Made of close grain, tough gray iron. Badly worn piston rings cause loss of compression and power. Size, 3 3/4 inch only. Shipping weight, about 3 ounces. No. 28H11728 Standard Piston Rings. Price, each. 9c



Felt Washers. Set of Six Felt Washers, two each for rear wheel hub, 2510B, and front wheel hub, 2809 one each for crankshaft, 3012, and steering bracket, 3544. Shipping weight, 3 ounces. No. 28H11890 Price, per set. 9c

Complete set of twenty felt washers and gaskets for Ford cars. Packed in box, including two each numbers 2510B, 2809, 3111, 3377 and 3451; one each of all the other felt gaskets, as shown in the illustration above. Weight, 5 ounces. No. 28H11891 Price, per set. 35c



Valve Grinder.

Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4 1/2 inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price, 25c



Standard Pistons.

High grade close grain gray iron pistons, complete with pin and bushing in five regulation sizes to properly fit cylinder walls worn down according to age of car or distance traveled. In ordering follow information given in price table below. Guaranteed to give highly satisfactory results. Average weight, about 3 pounds. Shipping weight, about 4 1/2 pounds.

No.	Size	Age of Car or Distance Run	Price
28H13120	Standard	Less than 1 year or up to 5,000 miles.....	1.23
28H13122	.0025 oversize	1 to 2 years or 5,000 to 10,000 miles.....	1.24
28H13124	.005 oversize	2 to 3 years or 10,000 to 15,000 miles.....	1.25
28H13126	.010 oversize	3 to 4 years or 15,000 to 20,000 miles.....	1.26
28H13128	.03125 oversize	Over 4 years or over 20,000 miles.....	1.27

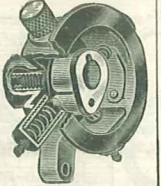
IGNITION.

TIMERS.

A high grade roller contact timer, for late 1912 and early 1913-1917 Ford cars. No. 28H8268 Timer, for late 1912 and 1913-1917 model Ford cars. Shpg. wt., about 14 oz. Price, \$1.05 No. 28H8267 Milwaukee Timer, for 1910-'11 and early 1912 model Ford cars. Shpg. wt., about 1 1/2 lbs. Price, \$3.20

Bonus Ball Contact Timer.

A high grade ball contact timer giving rapid, snappy contacts and very durable. Devised to continually engage fresh contact surfaces. Balls retain only slight oil film on surfaces. By shortening duration of contact less current is needed, leaving plenty for lighting headlights. Shipping weight, about 1 pound. No. 28H8200 Bonus Ball Contact Timer. Price, \$1.55



Goodrich Lock Switch.

A positive ignition lock. Replaces regular ignition switch. Has individual Yale lock with two keys. When locked in off position switch cannot be removed, screws being concealed by metal shutters thrown over by same turn of key that locks switch. Shipping weight, about 3 ounces. No. 28H11189 Goodrich Lock Switch. Price, \$2.75

Master Vibrator.

Permits uniform firing in all cylinders without adding coil units separately. A standard efficient vibrator, adapted for either the Ford or standard type cars. Comes in hardwood case with brass fittings, with full instructions for connecting and adjusting. Shipping wt., about 3 pounds. No. 28H11740 Master Vibrator Coil. Price, \$4.90

IGNITION OUTFIT.

Low tension wires protected with cable insulation against grease, oil drippings, etc. Complete with terminals. Shipping weight, about 1 pound. No. 28H11712 Ignition Outfit, comprising Primary and Secondary Wiring Set. Price, complete. 75c

No. 28H12364 Secondary or Spark Plug Wiring Set.

Shipping wt., about 6 oz. Price, 25c



Champion Starter.

Put a Champion Starter on your Ford car and secure the added pleasure and comfort which this equipment insures. "Killing" your engine on a muddy road, in stormy weather or in traffic loses its annoyance. A pull of the starting handle quickly turns the engine over while you remain seated behind the wheel. The Champion Starter operates on the ratchet principle. It is readily installed, full directions being furnished. Every part of the mechanism is concealed under the hood except the starter handle, which comes through the dash in a position convenient for handling. All parts subject to wear are made of high grade steel, machined and hardened. We recommend this starter as an inexpensive, practical device that will turn the motor over every time it is operated. It is designed to disconnect automatically when the motor backfires, an invaluable feature. Shipping weight, about 14 pounds. No. 28H13116 Champion Starter for Ford Cars. Price, complete outfit. \$5.45

Unit-Coil.

A complete, efficient ignition system. Eliminates need of the timer and of adjusting vibrator coils. Operates on magneto or storage battery current with a single unit of coil. A combination of timer and distributor carried on an elevating gear bracket. Contains a simple circuit operating mechanism which causes one pair of contacts to exactly time the current to a single coil unit, from which it is delivered by high tension distributor direct to spark plugs exactly as a magneto does; gives a positive spark. Make sure vibrator points of coil unit are in good condition. Complete instructions. Shipping weight, about 6 lbs. No. 28H11741 Unit-Coil. Price, \$10.50

ILLUMINATION.

Regulate Lighting Switch.

A four-point switch mounted on enameled case containing a choke coil. Chokes alternating currents of electricity and prevents burning out of lamps by great rise of voltage at excessive engine speeds, or failure of ignition, due to diverting too much current to lamps. Has no effect on lamps when car is running slowly. Directions for attaching. For use with 9-volt lighting systems use 6-volt bulbs to obtain better light at low engine speeds. Shipping weight, about 1 1/2 pounds. No. 28H11735 Regulate Lighting Switch. Price, 1.60

wire, necessary electric connections and two 6-volt 12-candle power tungsten lamps with Edison fittings. The system operates from the magneto. Use our Regulate Switch No. 28H11735 described at the left, to get the best results. Furnished in two sizes of reflectors. No. 28H11707 Electric Lighting Outfit, 8-inch reflectors. Price, \$3.28

No. 28H11708 Same as above. 9-inch reflectors. Price, \$3.29

Shipping weight, either of above outfits, about 2 1/2 pounds. No. 28H6031 6-Volt, 12-Candle Power Tungsten Lamp, Edison base, for headlight use. Shipping weight, about 6 ounces. Price, 20c No. 28H6033 9-Volt, 18-Candle Power Tungsten Lamp, Edison base, for use with lights used with 1913-1917 lighting system furnished with car. Shipping weight, about 6 ounces. Price, 20c

CIRCULATION.

Radiator Hose.

Standard several ply steam hose with beveled ends in correct sizes. Outlet hose, 2 inches inside diameter, 3 1/4 inches long. Inlet hose, 1 1/2 inches inside diameter, 2 1/4 inches long. No. 28H11793 Outlet Hose. Shipping weight, about 7 ounces. Price, 10c No. 28H11794 Inlet Hose. Shipping wt., about 4 oz. Price, 8c

Radiator Cap.

An inexpensive radiator cap, hard rubber top. Shipping weight, 3 ounces. No. 28H11719 Radiator Cap. Price, 24c

Fan Belts.

A Spartan leather endless fan belt made of tough heat, oil and moisture resisting leather. Shipping weight, about 4 ounces. No. 28H11770 For Ford cars up to 1916 models. Size, about 22 1/4 x 1 1/2 inches. Price, each. 32c No. 28H11243 For 1917 Ford cars. Size, about 26 1/4 x 1 1/2 inches. Price, each. 36c Fabric Fan Belt. Shipping wt., about 4 oz. No. 28H11771 For Ford cars up to 1916 models. Price, each. 17c No. 28H12544 For 1917 Ford cars. Price, each. 17c

WHEEL ACCESSORIES.

Hub Cap.

No. 28H11737 Hub Cap. Standard hexagonal end brass cap. Shpg. wt., about 4 oz. Price, each. 16c

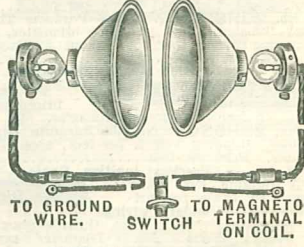
Adjustable Wheel Pull.

Standard type adjustable wheel pull, made of malleable iron. Adjustable feature makes removal of wheel much easier than using solid type wheel pull. Has large steel set screw. Shpg. wt., abt. 2 lbs. No. 28H11733 Wheel Pull. Price, 19c No. 28H11734 Adjustable Wheel Pull. Price, 29c

Dixon No. 680 Differential Graphite.

For use in Ford car differential housings that leak at ends of axle. No. 28H13112 2 1/2-lb. cans. Shipping weight, 3 1/2 pounds. Price, per can. 75c No. 28H11897 5-lb. cans. Shipping weight, pounds. Price, per can. \$1.30

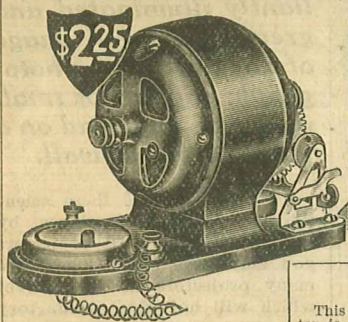
Electric Lighting Outfit.



NOTE—Measure door lens inside to get proper size reflector.

Boys! Ever run an electric motor?

It's great sport — they run on dry batteries, and they go like everything!



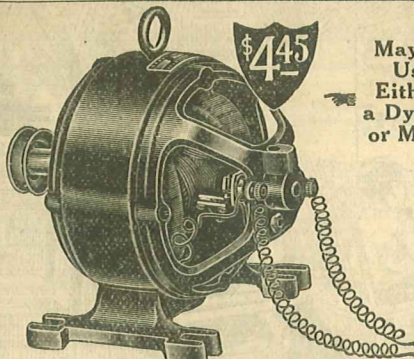
Two-Speed Motor.

This motor is equipped with worm drive, reducing gear and start, stop and reverse switch. On a shaft is mounted a windlass for operating different mechanical devices. Small shift lever provided for throwing gear in and out of mesh. Motor measures 3 3/4 inches high and 4 1/2 inches over shaft. Mounted on metal base, 6 1/4 x 2 1/2 inches. Can be operated from three or four dry cells, storage battery or city current reduced by transformer. Shipping weight, 2 3/4 pounds.

No. 69H5928 Price..... **\$2.25**

Type S High Speed Battery Dynamo-Motor

\$4.45



May Be Used Either as a Dynamo or Motor.

This Type S Dynamo-Motor is designed especially for experimental work in school laboratories as well as the home. The armature is made of steel laminations 1 1/4 inches in diameter with six slots, and the shaft is 1/4 inch in diameter. The windings are dipped in insulating varnish and baked to insure the best possible results. The pulley is 1 inch in diameter, grooved. The brush holder has rocker arms for adjusting the brushes.

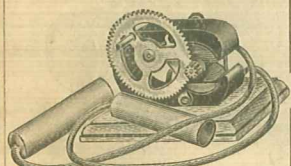
Used as a dynamo, this machine, on open circuit, when run at 3,000 revolutions per minute, has an output of 9 volts. Under safe maximum load the output is 6 volts 4 amperes. As a dynamo, it may be used for electro plating, lighting miniature and electric lamps, operating electric motors, toy trolley cars and various other appliances. When used as a dynamo, this machine may be operated by the hand power described below, or by means of a 3/4-inch round belt it may be connected to a gas engine, a sewing machine or any other source of power. Height, 6 inches. Used as a motor, this machine is operated by batteries, giving excellent results on from 4 to 6 volts (three or four cells of battery, any kind, wet or dry). The best results are obtained by using four cells, or better still, eight cells, four in series, two multiples. Shipping weight, 7 1/2 pounds.

No. 69H5919 Price, without battery..... **\$4.45**

NOTE—This motor is not powerful enough to run sewing machines, washing machines, cream separators or machinery of this character.

Hand Power Machines, for operating the Type S Dynamo-Motor when used as a dynamo. Large gears drive dynamo at high speed with little effort. Substantial and nicely finished. Shipping wt., 4 lbs. **\$2.25**

No. 69H5920 Price..... **\$2.25**



Electric Thriller, 97c.

The Electric Thriller will create lots of fun and amusement. It gives a shock so strong as to make a strong man tremble, or so mild as not to injure a young child, the strength of the shock depending entirely upon the speed with which the handle is turned. It costs nothing to run and does not require a battery. Finished in bright red enamel with nickel plated trimmings, mounted on a neat wood baseboard. Shipping weight, 1 pound 5 ounces.

No. 69H5903 Price, complete, ready for use.... **97c**



Toy Transformers.

For reducing ordinary city current to the proper strength necessary for operating toy motors, electric trains, etc. This is done by simply connecting the transformer direct to the lighting socket and regulating the voltage by means of the regulating switch, which in turn regulates the speed. Transformers are supplanting batteries because they are a great deal more economical and will last a long time. We offer here three different types representing different degrees of strength and quality for reducing alternating current only. These transformers are made of high quality material and come complete with cord and plug.

Our Medium Grade Transformer.

Has not as large a range as No. 69H5913, but is very efficient. Capacity, 50 watts. Has ten voltages, ranging from 2 to 20 volts in 2-volt steps. Size, 4 1/4 x 3 3/4 x 3 3/4 inches. Shipping weight, 8 pounds.

No. 69H5912 Price..... **\$2.98**

Our Very Best.

Designed to do more work than either of the other two. Capacity, 75 watts. Has sixteen voltages, ranging from 1 1/2 to 24 volts in 1 1/2-volt steps. Size, 5 x 4 x 3 1/4 inches. Shipping weight, 8 pounds.

No. 69H5913 Price..... **\$3.98**

Our Popular Priced Transformer.

Not as high a quality as either of the higher priced transformers but still strong enough to run any electric train or motor we list. Especially built to supply demand at popular price. Capacity, over 50 watts. Has eight voltages in 3-volt steps. Size, 3 1/4 x 3 3/4 x 2 1/4 inches. Shpg. wt., 3 lbs.

No. 69H5936 Price..... **\$2.25**

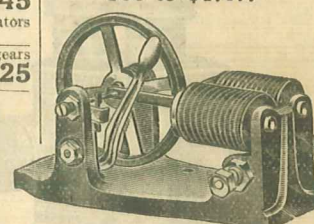
Buy This "One Mouse-Power" Motor.

For Tinker Toy Models and Other Small Toys.



Wonderful value in motor. Especially adapted to running construction toy outfit models. Price brings this motor within easy reach of everybody. One dry cell runs it. Mechanically and electrically perfect. Size, 2 1/2 x 1 1/2 in., mounted on strong wood base. Shipping wt., 7 oz. No. 69H5938 **33c**

Toy Electric Engines, 50c to \$1.47.

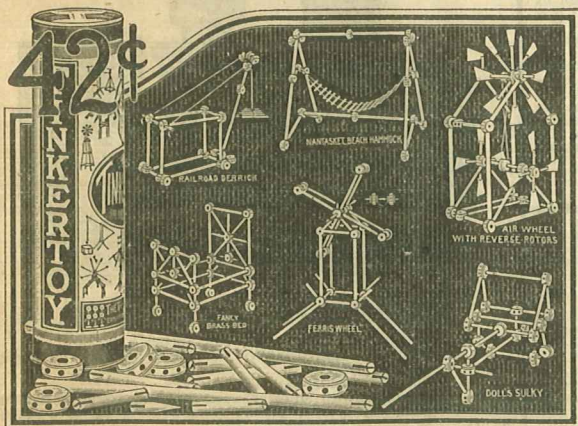


Electric Engine. Will run at a speed of from 300 to 1,000 revolutions per minute. The speed can be regulated by the controlling lever, which also starts, stops, or reverses the engine. Three sizes.

No. 69H5900 One-Battery. Size, 4 inches long, 2-inch flywheel. Shpg. wt., 1 lb. **50c**

No. 69H5901 Two-Battery. Size, 5 1/4 inches long, 2 1/2-inch flywheel. Shipping wt., 1 1/2 lbs. Price..... **98c**

No. 69H5937 Three-Battery. Size, 7 inches long, 3 1/2-inch flywheel. Shpg. wt., 3 lbs. Price..... **\$1.47**

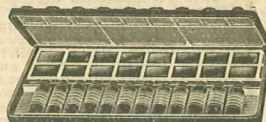


Tinker Toy-Wonder Builder.

Build, in a few minutes, most any top model. Tinker Toy consists of 70 to 75 pieces of white wooden sticks and spools with holes. Each stick is spring sawed on each end so it enters the hole in the spool tightly. The pieces are as thick as a lead pencil, very strong and sturdy. Shipping weight, 1 pound.

No. 49H4760 Price, per set..... **42c**

A Wonder Value.



A very popular size box. Contains sixteen dry colors, twelve tube colors, good paint brush. Size of box, 8 x 3 1/2 inches, with directions. A good practical set. Shipping weight, 11 ounces.

No. 49H3856 Price..... **79c**

This Paint Box, 17c.

Twenty-one colors, with brush. Metal box, size 3 x 8 inches. Shipping weight, 8 ounces.

No. 49H3854 Price..... **17c**

Four Tops for 13c.

Rubber cushion, frictionless, fancy striped and red, white and blue tops, 2 1/4 inches high. Complete with cord. Shipping weight, 10 ounces.

No. 69H7771 Price..... **13c**

Cut-Out Map of the United States.



This is an educational toy that every parent should buy. Teaches the child geography and many facts it would otherwise take years to learn. The maps are very accurate and show the state lines, rivers, mountain ranges, etc. A most interesting and instructive amusement. Size, 20 x 12 inches. States cut at border lines. Made from 3-ply veneer wood to prevent warping, and packed in fancy box. Shipping weight, 1 1/2 pounds.

No. 49H3861 Price..... **42c**

Our Biggest Registering Bank Value.

Registers pennies, nickels, dimes and quarters. It is made of strong sheet steel, attractively decorated. Opens automatically when a total of \$10.00 is deposited. Size, 7 1/4 x 8 3/4 inches. Shipping weight, 2 3/4 pounds.

No. 69H8729 Price..... **\$1.19**

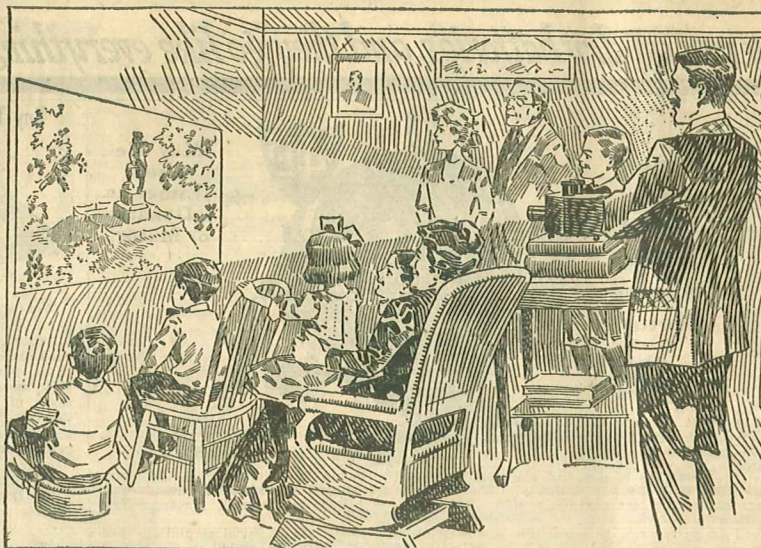


Post Card Projectors

THE MODERN
MAGIC LANTERNS

**No Glass Slides
Necessary
Uses Any Kind of
Picture
Pleases the Whole
Family**

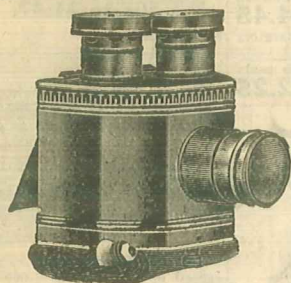
THE PICTURES ON THE SCREEN are large, brilliant and clearly defined, just like stereopticon or magic lantern views, but the expensive glass slides which are necessary with the old style magic lantern are not required. These projectors use any photograph or post card, any picture cut from a magazine or newspaper, your own drawings, or any small flat object, such as a butterfly, a leaf, a pressed flower or a watch, and the object or picture is accurately projected on to the screen greatly enlarged, sharp and clear in all its details and in all its own natural colors.



Very simple and easily operated instruments which project a brilliantly illuminated and greatly enlarged image of any post card, photograph, clipping or small object of any kind on a white screen or wall.

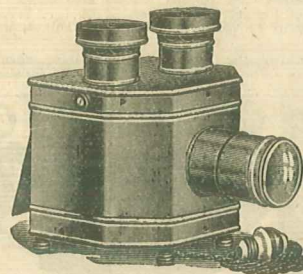
DO NOT JUDGE these scientifically designed machines by any other post card projectors you may have seen. There are many projectors on the market which will not give satisfactory results, but our projectors are made right in every way. Every detail of design and construction has had the painstaking attention of experts in projection apparatus.

THE REMARKABLY GOOD RESULTS obtained with these machines are largely due to the optically perfect parabolic reflectors together with a more scientific adjustment of reflectors and light. We guarantee more illumination with these projectors than is possible with any other projector on the market. The great illumination, in combination with the specially ground double lenses and curved picture holders, results in larger, brighter and sharper images on the screen than we believe is possible with any other machine.



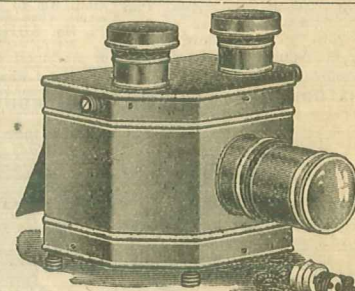
Model 1 Projector, \$1.98

Size of machine, 9 inches wide, 10 inches high.
Finish. Glossy red enamel, handsomely decorated in white, gilt and black.
Single lens, 2½ inches in diameter.
Detachable back, with curved picture holder, not reversible. Takes 3½x5½-inch cards horizontally.
Multiplane reflectors.
Size of picture, 4 feet across at 8 feet from screen.
No. 20H2884 For Electricity, 105-115 Volts. Shipping weight, 4 pounds 1 ounce. Price.....\$1.98
No. 20H2885 For Acetylene Gas. Shipping weight, 4½ pounds. Price.....\$1.98
No. 20H2886 For Artificial Gas. Shipping weight, 3½ pounds. Price.....\$1.98



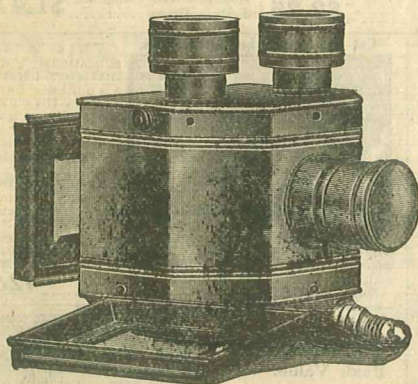
Model 2 Projector, \$3.98

Size of machine, 9¾ inches wide, 10¼ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, 2¾ inches in diameter.
Hinged back, with curved revolving picture holder for either horizontal or vertical cards, 3½x5½ inches.
Parabolic reflectors, 6 inches in diameter.
Size of picture, 4½ feet across at 9 feet from screen.
No. 20H2887 For Electricity, 105-115 Volts. Shipping weight, 5½ pounds. Price.....\$3.98
No. 20H2888 For Acetylene Gas. Shipping weight, 7 pounds. Price.....\$3.98
No. 20H2889 For Artificial Gas. Shipping weight, 6¼ pounds. Price.....\$3.98



Model 3 Projector, \$5.98

Size of machine, 11¾ inches wide, 10¾ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, 3¾ inches in diameter.
Hinged back, with curved revolving picture holder for either horizontal or vertical cards, 3½x5½ inches.
Parabolic reflectors, 7½ inches in diameter.
Size of picture, 5½ feet across at 11 feet from screen.
No. 20H2890 For Electricity, 105-115 Volts. Shipping weight, 7¼ pounds. Price.....\$5.98
No. 20H2891 For Acetylene Gas. Shipping weight, 10½ pounds. Price.....\$5.98
No. 20H2892 For Artificial Gas. Shipping weight, 9 pounds. Price.....\$5.98



Model 4 Projector, \$7.98

Size of machine, 11¾ inches wide, 13¾ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, 3¾ inches in diameter.
Two detachable sliding backs with adjustable curved revolving picture holders, which take any size of picture from 3¼x6½ up to 4½x6½ inches.
Parabolic reflectors, 7½ inches in diameter.
Size of picture, 6½ feet across at 12 feet from screen.
No. 20H2893 For Electricity. 105-115 Volts. Shipping weight, 10½ pounds. Price.....\$7.98
No. 20H2894 For Acetylene Gas. Shipping weight, 12½ pounds. Price.....\$7.98
No. 20H2895 For Artificial Gas. Shipping weight, 11¼ pounds. Price.....\$7.98

Size of Pictures on Screen

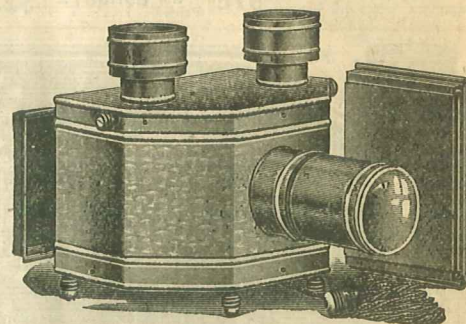
The size of picture thrown on the screen by any of our projectors depends upon the distance of the projector from the screen. The greater the distance the larger the picture will be. Moving the projector closer to the screen results in a smaller but brighter picture; moving it farther away produces a larger but less brilliant picture. The distance at which the most satisfactory results are obtained is largely a matter of personal opinion. In our descriptions we state the size of picture at the distance which we consider most satisfactory.

About the Light

When comparing prices kindly note that all our electric models are equipped with two high candle power incandescent electric lamps, 6 feet of double conductor electric cord, and socket for attaching to any electric light fixture. Unless otherwise requested we always send lamps suitable for 105 to 115-volt current.

Acetylene gas models are equipped with two high candle power gas burners with mantles, 6 feet of special gas tubing, and connections for attaching to any gas fixture.

We recommend electric light or artificial gas where it can be used, because it is a little handier than acetylene gas, but acetylene gas gives just as good a picture as electric light or artificial gas. With our improved generator, which is guaranteed to be safe, it is only necessary to put in a little carbide, pour in a little water, and the projector is ready to light immediately.



Model 5 Projector, \$11.98

Size of machine, 13 inches wide, 14½ inches high.
Finish. Polished oxidized copper plate, hand curled, with bright copper bands.
Double lens, 3¾ inches in diameter.
Two sliding backs with adjustable self centering revolving picture holders, taking any size of picture from 3¼x7½ up to 5¾x7½ inches.
Parabolic reflectors, 8¾ inches in diameter.
Size of picture, 7 feet across at 16 feet from screen.
No. 20H2896 For Electricity. 105-115 Volts. Shipping weight, 13 pounds. Price.....\$11.98
No. 20H2897 For Acetylene Gas. Shipping weight, 14½ pounds. Price.....\$11.98
NOTE—Models 4 and 5 are provided with two backs. While one is in position the other can be loaded, sliding smoothly into position as the first one is removed, so that one picture follows another without the undesirable interval of a blank and brilliantly lighted screen between pictures.

FREIGHT RATES

Tables Showing the Freight Rates per 100 Pounds on Goods Shipped From Chicago to a Number of Cities in Each State, These Cities Being Used by the Railroads as a Basis for Figuring Rates for All the Towns in the Immediate Vicinity of Each City.

RAILROAD COMPANIES FIGURE FREIGHT RATES WITH THE LARGER CITIES IN EACH STATE AS A BASIS. All other towns located in the same part of the state as any one of these cities take practically the same rate or only a few cents per 100 pounds more or less than the rate to the larger city.

Please consult the following Table of Rates, considering it in connection with the classification of merchandise, and you will be able to determine easily, almost exactly, what the freight will amount to on any goods. If your station is not named in these tables, the rate to

your station will be very nearly the same as the rate to the nearest city named, or you may ask your freight agent.

HOW TO SAVE ON FREIGHT CHARGES. In having goods shipped by freight, it pays you to make up an order of 100 pounds or more, because railroad companies usually charge as much for a shipment weighing less than 100 pounds as they do for one weighing 100 pounds.

WHEN YOU LEAVE THE METHOD OF SHIPMENT TO US we always choose the cheapest method.

CLASSIFICATION OF MERCHANDISE FOR FREIGHT SHIPMENTS.

You will notice in the Freight Rate Tables below there are four different rates quoted to each city, first class, second class, third class and fourth class. This is because the railroad companies base their rates on the kind of merchandise to be carried. In order, therefore, to give you an idea as to the rate which any kind of merchandise will take to your nearest city, we tell you here the kind of merchandise which takes the different classes of rates.

FOUR TIMES FIRST CLASS	FIRST CLASS	FIRST CLASS	FIRST CLASS	SECOND CLASS	SECOND CLASS	THIRD CLASS
Row Boats	Awnings	Harness and Saddlery	Wagons Farm (East and West)	Loaded Gun Shells (West and East)	Iron Pots and Kettles	Iron Safes
DOUBLE FIRST CLASS	Baby Carriages (South)	Horse Clipping Machines (South)	Wagon Wheels (East and West)	Oilcloths	Oils (West and South)	Paints (East)
Buggies (54-in. crates) (East)	Bathtubs	Incubators	Washing Machines	Oils (East)	Oil Stoves (South)	Stoves and Ranges (East Iron)
Cameras (West)	Books	Ladders (West and South)		Plumbing Material	Pulleys	Stump Pullers (East R25)
Dress Forms	Brooders	Loaded Gun Shells (South)	SECOND CLASS	Refrigerators	Tools (East)	Tools (East)
Road Carts	Buggies (34-in. crates) (South)	Matting	Ammunition (West and East)	Sewing Machines (South)	Vises (East R26)	Windmills (East R25)
Sleds, Children's (West)	Cameras (East and South)	Milk Cans (West and South)	Animal Traps	Tools (West and South)	Wire Fencing (East R26)	
1/2 TIMES FIRST CLASS	Camera Supplies	Morris Chairs	Bedsteads	Vacuum Cleaners		
Baby Carriages (East and West)	Carpets	Notions	Concrete Block Machines (West)	Vises (West and South)		
Bicycles	Chinaware	Oil Stoves (East and West)	Cream Separators	Wagons, Children's (West)		
Buggies (34-in. crates) (East and West)	Clocks	Pianos and Organs	Crockery (West)	Wall Paper		
Buggies (54-in. crates) (West and South)	Clothing	Pictures	Extension Tables	Woodenware		
Desks (East)	Concrete Block Machines (East)	Rugs	Feed Troughs, Cast or Wrought	Wringers		
Milk Cans (East)	Couches	Sewing Machines (West and East)	Iron	Wheelbarrows		
Motorcycles	Curians	Sporting Goods	Forges (East and South)	THIRD CLASS		
Sleds, Children's (East and South)	Dressers	Stationery	Gasoline Engines (East)	Church, School and Farm		
Trunks (East)	Drugs	Tents	Grantware	Bells (East R25)		
FIRST CLASS	Dry Goods	Tinware	Grindstones with Frames	Crockery (East R26)		
Ammunition (South)	Electrical Goods	Toys	Hardware (West and South)	Farm Implements (East R25)		
Automobile Repairs	Fire Arms	Trunks (West and South)	Horse Clipping Machines	Gasoline Engines (South)		
	Forges (West)	Valises	(West and East)	Grindstones with Frames		
	Gasoline Engines (West)	Wagons, Children's (East and South)	Ladders (East)	(East R26)		
	Graphophones		Linoleum	Hand Pumps (East R25)		
				Hardware (East)		

HERE ARE THE RATES PER 100 POUNDS TO DIFFERENT TOWNS IN EACH STATE.

From Chicago to	1st Class Freight, per 100 Pounds.	2d Class Freight, per 100 Pounds.	3d Class Freight, per 100 Pounds.	4th Class Freight, per 100 Pounds.	From Chicago to	1st Class Freight, per 100 Pounds.	2d Class Freight, per 100 Pounds.	3d Class Freight, per 100 Pounds.	4th Class Freight, per 100 Pounds.
ALABAMA—					KENTUCKY—				
Birmingham	\$1.32	\$1.12	\$0.93	\$0.75	Frankfort	\$0.63	\$0.54	\$0.42	\$0.32
Brewton	1.48	1.22	1.00	.82	Hopkinsville .....	.80	.65	.55	.46
Mobile	1.10	.90	.75	.58	Louisville .....	.43	.37	.27	.19
Montgomery	1.33	1.17	1.00	.77	Morehead .....	.81	.68	.53	.37
ARIZONA—					LOUISIANA—				
Phoenix	2.90	2.51	2.09	1.75	Lake Charles	1.60	1.34	1.10	.93
Tucson	2.90	2.51	2.09	1.75	New Orleans	1.10	.90	.75	.58
ARKANSAS—					Shreveport	1.45	1.24	1.07	.88
Arkansas City	1.20	1.01	.77	.59	MAINE—				
Fort Smith	1.30	1.11	.87	.69	Bangor .....	.86	.74	.58	.41
Hot Springs	1.55	1.32	1.05	.81	MARYLAND—				
Little Rock	1.20	1.01	.77	.59	Baltimore .....	.76	.65	.50	.34
Texarkana	1.47	1.27	1.08	.96	MASSACHUSETTS—				
CALIFORNIA—					Boston .....	.86	.74	.58	.41
Bakersfield	3.40	2.95	2.45	2.07	MICHIGAN—				
Los Angeles	3.40	2.95	2.45	2.07	Bessemer .....	.65	.55	.44	.28
San Francisco	3.40	2.95	2.45	2.07	Detroit .....	.39	.34	.25	.17
COLORADO—					Grand Rapids .....	.35	.30	.23	.16
Denver	1.80	1.45	1.10	.85	Traverse City .....	.52	.44	.34	.25
Durango	3.20	2.70	2.15	1.60	MINNESOTA—				
Grand Junction	2.65	2.23	1.85	1.49	Aitkin .....	.93	.78	.62	.42
Julesburg	1.68	1.41	1.07	.85	Crookston	1.19	.99	.79	.55
Leadville	2.65	2.23	1.85	1.49	Duluth .....	.65	.55	.44	.28
CONNECTICUT—					Grand Rapids .....	.98	.82	.66	.44
Hartford .....	.86	.74	.58	.41	Minneapolis .....	.60	.50	.40	.25
DELAWARE—					Winona .....	.50	.42	.33	.23
Dover .....	.79	.68	.53	.37	MISSISSIPPI—				
DIST. OF COLUMBIA—					Hattiesburg	1.29	1.09	.93	.78
Washington .....	.76	.65	.50	.34	Jackson	1.26	1.06	.90	.76
FLORIDA—					Natchez	1.10	.90	.75	.58
Jacksonville	1.30	1.10	.97	.85	MISSOURI—				
Miami	2.27	1.97	1.74	1.55	Kansas City .....	.80	.65	.45	.32
Pensacola	1.10	.90	.75	.58	St. Louis .....	.46	.37	.29	.23
Tallahassee	1.82	1.57	1.35	1.08	Springfield .....	.82	.72	.50	.37
Tampa	1.80	1.53	1.31	1.17	MONTANA—				
GEORGIA—					Billings	2.50	2.09	1.69	1.36
Atlanta	1.42	1.22	1.03	.83	Glasgow	2.25	1.92	1.55	1.18
Macon	1.42	1.22	1.03	.83	Havre	2.50	2.14	1.74	1.36
Savannah	1.30	1.10	.97	.85	Helena	2.65	2.26	1.85	1.49
Waycross	1.70	1.46	1.29	1.07	Kalispell	2.75	2.35	1.93	1.57
IDAHO—					Miles City	2.25	1.92	1.55	1.18
Boise	2.81	2.41	2.00	1.65	NEBRASKA—				
Pocatello	2.65	2.23	1.85	1.49	Lincoln .....	.85	.70	.49	.36
ILLINOIS—					North Platte	1.46	1.30	.99	.78
Cairo .....	.47	.38	.31	.24	Omaha .....	.80	.65	.45	.32
Joliet .....	.21	.17	.15	.14	NEVADA—				
Rock Island .....	.38	.30	.23	.19	Austin	3.65	3.28	2.89	2.41
Springfield .....	.39	.31	.24	.20	Carson City	3.15	2.76	2.34	2.00
INDIANA—					NEW HAMPSHIRE—				
Evansville .....	.42	.36	.26	.18	Concord .....	.86	.74	.58	.41
Fort Wayne .....	.30	.26	.21	.14	NEW JERSEY—				
Indianapolis .....	.33	.28	.23	.15	Atlantic City .....	.84	.73	.58	.42
Richmond .....	.38	.33	.24	.17	Trenton .....	.79	.68	.53	.37
South Bend .....	.23	.21	.18	.14	NEW MEXICO—				
IOWA—					Gallup	2.90	2.51	2.09	1.75
Des Moines .....	.60	.48	.36	.27	Santa Fe	2.20	1.86	1.50	1.25
Fort Dodge .....	.65	.52	.39	.29	Silver City	2.60	2.21	1.82	1.56
Sioux City .....	.80	.65	.45	.32	NEW YORK—				
KANSAS—					Albany .....	.76	.66	.50	.35
Dodge City	1.62	1.39	1.08	.83	Buffalo .....	.47	.41	.32	.22
Great Bend	1.45	1.22	.95	.77	New York .....	.79	.68	.53	.37
Kansas City .....	.80	.65	.45	.32	Syracuse .....	.63	.55	.42	.29
Topeka	1.00	.82	.59	.43	NORTH CAROLINA—				
Wichita	1.30	1.11	.86	.65	Raleigh	1.17	1.01	.78	.56
					Wilmington	1.17	.98	.75	.56

We Positively Guarantee the Safe Delivery of Everything Shipped by Us.

SEARS, ROEBUCK AND CO., 765A
768 CHICAGO, ILL.

Rates for Parcel Post Shipments

Your postmaster will tell you the parcel post zone in which your postoffice is located, measuring from Chicago

All merchandise shipped by mail takes parcel post rates. Packages up to 4 ounces in weight are carried at the rate of 1 cent an ounce, regardless of distance. Packages over 4 ounces are charged for by the pound. The rate per pound varies according to the distance, which is measured by the Government zone system, each zone covering a certain number

of miles from point of shipment. Distances and rates are shown in the table below. Packages carried by parcel post are handled just like any other mail matter. They are delivered to your box by your rural mail carrier if you live on a rural route, or delivered to your door if you live in a city where there is carrier service, or delivered to your local postoffice if you live where there is no carrier service.

RATE TABLE FOR PARCEL POST SHIPMENTS

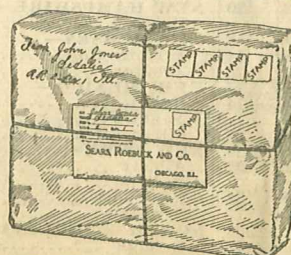
Weight of Package	LOCAL ZONE	ZONES 1 AND 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7	ZONE 8
	For Shipments From Our Store in Chicago to Customers Within Chicago	Not Over 150 Miles From CHICAGO	151 to 300 Miles From CHICAGO	301 to 600 Miles From CHICAGO	601 to 1,000 Miles From CHICAGO	1,001 to 1,400 Miles From CHICAGO	1,401 to 1,800 Miles From CHICAGO	Over 1,800 Miles From CHICAGO
	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required
Over 4 oz. up to 1 lb.	5c	5c	6c	7c	\$0.08	\$0.09	\$0.11	\$0.12
Over 1 lb. up to 2 lbs.	6c	6c	8c	11c	.14	.17	.21	.24
Over 2 lbs. up to 3 lbs.	6c	7c	10c	15c	.20	.25	.31	.36
Over 3 lbs. up to 4 lbs.	7c	8c	12c	19c	.26	.33	.41	.48
Over 4 lbs. up to 5 lbs.	7c	9c	14c	23c	.32	.41	.51	.60
Over 5 lbs. up to 6 lbs.	8c	10c	16c	27c	.38	.49	.61	.72
Over 6 lbs. up to 7 lbs.	8c	11c	18c	31c	.44	.57	.71	.84
Over 7 lbs. up to 8 lbs.	9c	12c	20c	35c	.50	.65	.81	.96
Over 8 lbs. up to 9 lbs.	9c	13c	22c	39c	.56	.73	.91	1.08
Over 9 lbs. up to 10 lbs.	10c	14c	24c	43c	.62	.81	1.01	1.20
Over 10 lbs. up to 11 lbs.	10c	15c	26c	47c	.68	.89	1.11	1.32
Over 11 lbs. up to 12 lbs.	11c	16c	28c	51c	.74	.97	1.21	1.44
Over 12 lbs. up to 13 lbs.	11c	17c	30c	55c	.80	1.05	1.31	1.56
Over 13 lbs. up to 14 lbs.	12c	18c	32c	59c	.86	1.13	1.41	1.68
Over 14 lbs. up to 15 lbs.	12c	19c	34c	63c	.92	1.21	1.51	1.80
Over 15 lbs. up to 16 lbs.	13c	20c	36c	67c	.98	1.29	1.61	1.92
Over 16 lbs. up to 17 lbs.	13c	21c	38c	71c	1.04	1.37	1.71	2.04
Over 17 lbs. up to 18 lbs.	14c	22c	40c	75c	1.10	1.45	1.81	2.16
Over 18 lbs. up to 19 lbs.	14c	23c	42c	79c	1.16	1.53	1.91	2.28
Over 19 lbs. up to 20 lbs.	15c	24c	44c	83c	1.22	1.61	2.01	2.40
Over 20 lbs. up to 21 lbs.	15c	25c						
Over 21 lbs. up to 22 lbs.	16c	26c						
Over 22 lbs. up to 23 lbs.	16c	27c						
Over 23 lbs. up to 24 lbs.	17c	28c						
Over 24 lbs. up to 25 lbs.	17c	29c						
Over 25 lbs. up to 26 lbs.	18c	30c						
Over 26 lbs. up to 27 lbs.	18c	31c						
Over 27 lbs. up to 28 lbs.	19c	32c						
Over 28 lbs. up to 29 lbs.	19c	33c						
Over 29 lbs. up to 30 lbs.	20c	34c						
Over 30 lbs. up to 31 lbs.	20c	35c						
Over 31 lbs. up to 32 lbs.	21c	36c						
Over 32 lbs. up to 33 lbs.	21c	37c						
Over 33 lbs. up to 34 lbs.	22c	38c						
Over 34 lbs. up to 35 lbs.	22c	39c						
Over 35 lbs. up to 36 lbs.	23c	40c						
Over 36 lbs. up to 37 lbs.	23c	41c						
Over 37 lbs. up to 38 lbs.	24c	42c						
Over 38 lbs. up to 39 lbs.	24c	43c						
Over 39 lbs. up to 40 lbs.	25c	44c						
Over 40 lbs. up to 41 lbs.	25c	45c						
Over 41 lbs. up to 42 lbs.	26c	46c						
Over 42 lbs. up to 43 lbs.	26c	47c						
Over 43 lbs. up to 44 lbs.	27c	48c						
Over 44 lbs. up to 45 lbs.	27c	49c						
Over 45 lbs. up to 46 lbs.	28c	50c						
Over 46 lbs. up to 47 lbs.	28c	51c						
Over 47 lbs. up to 48 lbs.	29c	52c						
Over 48 lbs. up to 49 lbs.	29c	53c						
Over 49 lbs. up to 50 lbs.	30c	54c						

It is not necessary to send stamps to pay the postage for shipping package; simply include the amount for charges in the money order, check or currency you send us. This charge for mailing must be paid in advance as the Government has not provided for the collection of mailing charge on delivery. If in doubt as to what amount is required for any order you are perfectly safe in adding even more than you think necessary, for we will ship by the most economical method and will return you any amount that is left over.

Throughout our catalogs you will find the shipping weight is given in the description of merchandise. Occasionally, according to the nature of the merchandise, we are obliged to give the actual weight. In such cases a few ounces extra in weight must be allowed for wrapping and packing, according to the nature of the goods.

Books. Parcel post rates apply to books as follows: All books up to and including 8 ounces in weight will be carried at the rate of 1 cent for 2 ounces to any part of the United States, regardless of distance, and all books over 8 ounces in weight will take the regular parcel post rates according to weight and zone.

How to Return Goods to Us by Parcel Post



The Way to Return Goods to Us by Parcel Post.

When you return goods by parcel post, put the letter you write and the bills for the goods (if you have the bills) in an envelope and paste or tie the envelope securely to the outside of the package. In addition to the postage you put on the package, put a 2-cent stamp on the envelope.

Within Local Zone and Zones 1 and 2 packages up to 50 pounds in weight are carried. The limit of weight for all other zones is 20 pounds. Articles measuring more than 7 feet in length and girth combined cannot be shipped by parcel post.

EXPRESS RATES

Tables Showing the Express Rates per 100 Pounds on Goods Shipped From Chicago to a Number of Cities in Each State, These Cities Being Used as a Basis for Figuring Rates for All the Towns in the Immediate Vicinity of Each City. Your Express Agent Will Tell You the Exact Rates From Chicago to Your Home Town and Give You Full Information in Reference to Their Delivery Service.

HOW TO FIGURE EXPRESS CHARGES

First estimate the weight of goods you are ordering; then find the rate per 100 pounds by express to your nearest city in the Table of Rates below; then consult the Scale of Express Charges, following the line for the weight of your goods to the column headed by your express rate per 100 pounds, and the amount shown will be the express charges.

If the exact rate per 100 pounds is not shown in any of the headings of this scale, take the next highest rate shown and the express charges will be about the same as to your town.

EXPRESS RATES PER 100 POUNDS TO CITIES IN EACH STATE.

From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.
ALABAMA—		GEORGIA—		MARYLAND—		NEW JERSEY—		SOUTH DAKOTA—	
Birmingham.....	\$2.40	Atlanta.....	\$2.60	Baltimore.....	\$2.25	Atlantic City.....	\$2.40	Aberdeen.....	\$3.15
Brewton.....	2.85	Macon.....	2.85	Boston.....	2.50	Trenton.....	2.40	Bellevue.....	3.80
Mobile.....	2.95	Savannah.....	3.20	MASSACHUSETTS—		NEW MEXICO—		Sioux Falls.....	2.45
Montgomery.....	2.60	Waycross.....	3.15	MICHIGAN—		Gallup.....	6.25	Watertown.....	2.75
ARIZONA—		IDAHO—		Bessemer.....	2.25	Santa Fe.....	4.75	TENNESSEE—	
Phoenix.....	8.00	Boise.....	7.85	Detroit.....	1.25	Silver City.....	6.50	Jackson.....	1.95
Tucson.....	7.15	Pocatello.....	7.00	Grand Rapids.....	1.00	NEW YORK—		Knoxville.....	2.40
ARKANSAS—		ILLINOIS—		Traverse City.....	1.60	Albany.....	2.30	Memphis.....	2.10
Arkansas City.....	2.50	Cairo.....	1.50	MINNESOTA—		Buffalo.....	1.80	Nashville.....	1.75
Fort Smith.....	2.90	Joliet.....	.60	Aitkin.....	2.65	New York.....	2.40	TEXAS—	
Hot Springs.....	2.90	Rock Island.....	1.00	Crookston.....	3.05	Syracuse.....	2.00	El Paso.....	5.95
Little Rock.....	2.65	Springfield.....	1.15	Duluth.....	2.40	NORTH CAROLINA—		Fort Worth.....	3.85
Texarkana.....	3.15	INDIANA—		Grand Rapids.....	2.40	Raleigh.....	2.95	Houston.....	4.10
CALIFORNIA—		Evansville.....	1.25	Minneapolis.....	2.00	Wilmington.....	3.20	UTAH—	
Bakersfield.....	8.90	Fort Wayne.....	1.00	Winona.....	1.70	NORTH DAKOTA—		Marysville.....	7.30
Los Angeles.....	8.90	Indianapolis.....	1.00	MISSISSIPPI—		Bismarck.....	3.65	Salt Lake City.....	6.60
San Francisco.....	9.30	Richmond.....	1.25	Hattiesburg.....	2.75	Fargo.....	2.90	VERMONT—	
COLORADO—		South Bend.....	.75	Jackson.....	2.65	Grand Forks.....	3.25	Montpelier.....	2.50
Denver.....	4.20	IOWA—		Natchez.....	2.90	Minot.....	3.80	VIRGINIA—	
Durango.....	5.90	Des Moines.....	1.80	MISSOURI—		Williston.....	4.10	Marion.....	2.45
Grand Junction.....	5.50	Fort Dodge.....	1.95	Kansas City.....	2.10	OHIO—		Richmond.....	2.60
Julesburg.....	3.70	Sioux City.....	2.45	St. Louis.....	1.40	Cincinnati.....	1.25	Rocky Mount.....	2.60
Leadville.....	5.00	KANSAS—		Springfield.....	2.25	Columbus.....	1.50	WASHINGTON—	
CONNECTICUT—		Dodge City.....	3.55	MONTANA—		Toledo.....	1.15	Seattle.....	8.60
Hartford.....	2.55	Great Bend.....	3.15	Billings.....	5.40	OKLAHOMA—		Spokane.....	7.75
DELAWARE—		Kansas.....	2.10	Glasgow.....	4.75	Oklahoma City.....	3.45	WEST VIRGINIA—	
DISTRICT OF COLUMBIA—		Topeka.....	2.25	Havre.....	5.55	OREGON—		Charleston.....	1.85
Washington.....	2.25	Wichita.....	3.15	Kalispell.....	6.80	Portland.....	8.85	Elkins.....	2.20
FLORIDA—		KENTUCKY—		Miles City.....	4.70	PENNSYLVANIA—		Wheeling.....	1.60
Jacksonville.....	3.45	Frankfort.....	1.40	NEBRASKA—		Harrisburg.....	2.15	WISCONSIN—	
Miami.....	4.55	Hopkinsville.....	1.60	Lincoln.....	2.45	Philadelphia.....	2.30	Ashland.....	2.25
Pensacola.....	3.10	Louisville.....	1.60	North Platte.....	3.40	Pittsburgh.....	1.70	La Crosse.....	1.35
Tallahassee.....	3.20	LOUISIANA—		Omaha.....	2.25	RHODE ISLAND—		Madison.....	1.15
Tampa.....	4.00	Lake Charles.....	3.45	NEVADA—		Providence.....	2.55	Marquette.....	1.75
		New Orleans.....	3.10	Austin.....	8.15	SOUTH CAROLINA—		Milwaukee.....	.90
		Shreveport.....	3.25	Carson City.....	8.65	Charleston.....	3.40	WYOMING—	
		MAINE—		NEW HAMPSHIRE—		Greenville.....	2.95	Cheyenne.....	4.15
		Bangor.....	2.95	Concord.....	2.55	Sumter.....	3.20	Green River.....	5.80
								Lander.....	5.35
								Sheridan.....	4.70

SCALE OF EXPRESS CHARGES BASED ON THE RATE PER 100 POUNDS.

Rate per 100 lbs....	\$0.60	\$0.75	\$0.90	\$1.00	\$1.15	\$1.25	\$1.35	\$1.40	\$1.50	\$1.60	\$1.70	\$1.75	\$1.80	\$1.85	\$1.95	\$2.00	\$2.10	\$2.15
CHARGES ON																		
Package of 1 lb....	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.27	.27	.27	.27	.27	.27
Package of 2 lbs....	.26	.26	.26	.26	.27	.27	.27	.27	.27	.28	.28	.28	.28	.28	.28	.28	.29	.29
Package of 5 lbs....	.27	.27	.28	.29	.29	.29	.30	.31	.31	.32	.32	.32	.33	.33	.33	.34	.34	.34
Package of 10 lbs....	.28	.30	.31	.32	.34	.35	.36	.36	.37	.38	.39	.40	.40	.41	.42	.42	.43	.44
Package of 15 lbs....	.30	.32	.35	.36	.38	.40	.41	.42	.44	.45	.47	.48	.49	.50	.51	.53	.53	.53
Package of 20 lbs....	.32	.35	.38	.40	.43	.45	.47	.48	.50	.52	.54	.55	.56	.57	.59	.60	.62	.63
Package of 25 lbs....	.34	.37	.41	.44	.47	.50	.52	.54	.56	.59	.61	.62	.64	.65	.67	.69	.71	.72
Package of 30 lbs....	.35	.40	.44	.47	.52	.55	.58	.59	.62	.65	.68	.70	.71	.73	.76	.77	.80	.82
Package of 35 lbs....	.37	.42	.48	.51	.56	.60	.63	.65	.69	.72	.76	.77	.79	.81	.84	.86	.90	.91
Package of 40 lbs....	.39	.45	.51	.55	.61	.65	.69	.71	.75	.79	.83	.85	.87	.89	.93	.95	.99	1.01
Package of 45 lbs....	.41	.47	.54	.59	.65	.70	.74	.77	.81	.86	.90	.92	.95	.97	1.01	1.04	1.08	1.10
Rate per 100 lbs....	\$2.20	\$2.25	\$2.30	\$2.40	\$2.45	\$2.50	\$2.55	\$2.60	\$2.65	\$2.75	\$2.85	\$2.90	\$2.95	\$3.05	\$3.10	\$3.15	\$3.20	\$3.25
CHARGES ON																		
Package of 1 lb....	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.28	.28	.28	.28	.28	.28	.28	.28
Package of 2 lbs....	.29	.29	.29	.29	.29	.29	.29	.30	.30	.30	.30	.30	.30	.31	.31	.31	.31	.31
Package of 5 lbs....	.35	.35	.35	.36	.36	.36	.36	.37	.37	.37	.38	.38	.38	.39	.39	.39	.40	.40
Package of 10 lbs....	.44	.45	.45	.46	.47	.47	.48	.48	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55
Package of 15 lbs....	.54	.55	.56	.57	.58	.59	.59	.60	.61	.62	.64	.65	.65	.67	.68	.68	.69	.70
Package of 20 lbs....	.64	.65	.66	.68	.69	.70	.71	.72	.73	.75	.77	.78	.79	.81	.82	.83	.84	.85
Package of 25 lbs....	.74	.75	.76	.79	.80	.81	.82	.84	.85	.87	.90	.91	.92	.95	.96	.97	.99	1.00
Package of 30 lbs....	.83	.85	.86	.89	.91	.92	.94	.95	.97	1.00	1.03	1.04	1.06	1.09	1.10	1.12	1.13	1.15
Package of 35 lbs....	.93	.95	.97	1.00	1.02	1.04	1.05	1.07	1.09	1.12	1.16	1.18	1.19	1.23	1.25	1.26	1.28	1.30
Package of 40 lbs....	1.03	1.05	1.07	1.11	1.13	1.15	1.17	1.19	1.21	1.25	1.29	1.31	1.33	1.37	1.39	1.41	1.43	1.45
Package of 45 lbs....	1.13	1.15	1.17	1.22	1.24	1.26	1.28	1.31	1.33	1.37	1.42	1.44	1.46	1.51	1.53	1.55	1.58	1.60
Rate per 100 lbs....	\$3.40	\$3.45	\$3.55	\$3.65	\$3.70	\$3.80	\$3.85	\$4.10	\$4.15	\$4.20	\$4.55	\$4.70	\$4.75	\$5.00	\$5.35	\$5.50	\$5.80	\$5.90
CHARGES ON																		
Package of 1 lb....	.28	.28	.28	.28	.28	.29	.29	.29	.29	.29	.29	.29	.29	.30	.30	.30	.31	.31
Package of 2 lbs....	.31	.31	.32	.32	.32	.32	.32	.33	.33	.33	.34	.34	.34	.34	.35	.35	.36	.36
Package of 5 lbs....	.41	.41	.41	.42	.42	.43	.43	.44	.44	.45	.46	.47	.47	.49	.50	.51	.53	.53
Package of 10 lbs....	.56	.57	.58	.59	.59	.60	.61	.63	.64	.64	.68	.69	.70	.72	.76	.77	.80	.81
Package of 15 lbs....	.72	.73	.74	.76	.77	.78	.79	.83	.83	.84	.89	.92	.92	.96	1.01	1.04	1.08	1.10
Package of 20 lbs....	.88	.89	.91	.93	.94	.96	.97	1.02	1.03	1.04	1.11	1.14	1.15	1.20	1.27	1.30	1.36	1.38
Package of 25 lbs....	1.04	1.05	1.07	1.10	1.11	1.14	1.15	1.21	1.22	1.24	1.32	1.36	1.37	1.44	1.52	1.56	1.64	1.66
Package of 30 lbs....	1.19	1.21	1.24	1.27	1.28	1.31	1.33	1.40	1.42	1.43	1.54	1.58	1.60	1.67	1.78	1.82	1.91	1.94
Package of 35 lbs....	1.35	1.37	1.40	1.44	1.46	1.49	1.51	1.60	1.61	1.63	1.75	1.81	1.82	1.91	2.03	2.09	2.19	2.23
Package of 40 lbs....	1.51	1.53	1.57	1.61	1.63	1.67	1.69	1.79	1.81	1.83	1.97	2.03	2.05	2.15	2.29	2.35	2.47	2.51
Package of 45 lbs....	1.67	1.69	1.73	1.78	1.80	1.85	1.87	1.98	2.00	2.03	2.18	2.25	2.27	2.39	2.54	2.61	2.75	2.79
Rate per 100 lbs....	\$5.95	\$6.25	\$6.50	\$6.55	\$6.60	\$6.80	\$7.00	\$7.15	\$7.30	\$7.75	\$7.85	\$8.00	\$8.15	\$8.60	\$8.65	\$8.85	\$8.90	\$9.30
CHARGES ON																		
Package of 1 lb....	.31	.31	.31	.31	.31	.32	.32	.32	.32	.32	.33	.33	.33	.33	.33	.34	.34	.34
Package of 2 lbs....	.36	.37	.37	.38	.38	.38	.38	.39	.39	.40	.40	.41	.41	.42	.42	.42	.42	.43
Package of 5 lbs....	.53	.55	.56	.57	.58	.59	.59	.60	.62	.63	.64	.64	.67	.67	.68	.68	.68	.70
Package of 10 lbs....	.82	.85	.87	.88	.88	.90	.92	.94	.95	1.00	1.01	1.02	1.04	1.08	1.09	1.11	1.11	1.15
Package of 15 lbs....	1.10	1.15	1.19	1.19	1.20	1.23	1.26	1.28	1.31	1.37	1.39	1.41	1.43	1.50	1.51	1.54	1.55	1.61
Package of 20 lbs....	1.39	1.45	1.50	1.51	1.52	1.56	1.60	1.63	1.66	1.75	1.77	1.80	1.83	1.92	1.93	1.97	1.98	2.06
Package of 25 lbs....	1.67	1.75	1.81	1.82	1.84	1.89	1.94	1.97	2.01	2.12	2.15	2.19	2.22	2.34	2.35	2.40	2.41	2.51
Package of 30 lbs....	1.96	2.05	2.12	2.14	2.15	2.21	2.27	2.32	2.36	2.50	2.53	2.57	2.62	2.75	2.77	2.83	2.84	2.96
Package of 35 lbs....	2.24	2.35	2.44	2.45	2.47	2.54	2.61	2.66	2.72	2.91	2.96	3.01	3.06	3.19	3.19	3.26	3.28	3.42
Package of 40 lbs....	2.53	2.65	2.75	2.77	2.79	2.87	2.95	3.01	3.07	3.25	3.29	3.35	3.41	3.59	3.61	3.69	3.71	3.87
Package of 45 lbs....	2.81	2.95	3.06	3.08	3.11	3.20	3.29	3.35	3.42	3.62	3.67	3.74	3.80	4.01	4.03	4.12	4.14	4.32

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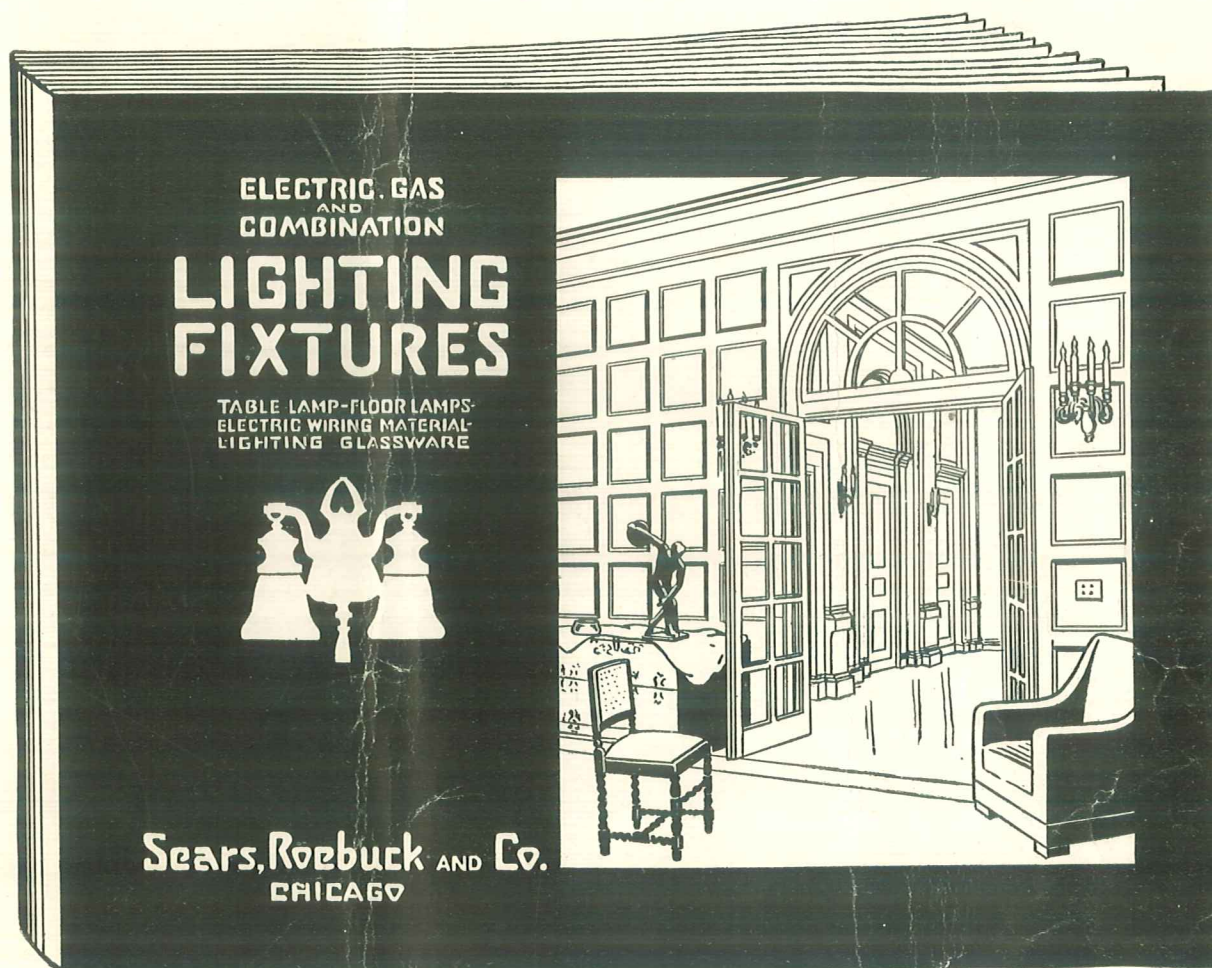
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